Rocky Mountain Medical Journal

This Is Community Chest Month

October 1951

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ECHINOCOCCUS DISEASE — SPINA BIFIDA
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COLORADO PRESIDENTIAL ADDRESS

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*Cutting, W. C.: A Manual of Clinical Therapeutics, ed. 2, Philadelphia, W. B. Saunders & Co., 1948, p. 484.

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Adams, C. H., and Cecil, R. L.: Ann. Int. Med. *33*:163, 1950.
Bayles, T. B.: Medical Forum, Mod. Med. (no. 24) *18*:86, 1950.
Gilbert, J. T., Jr., and Moore, F. H.: J. Kentucky State M. A. *48*:308, 1950.

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THE COLORADO STATE MEDICAL SOCIETY

NEXT ANNUAL SESSION: STANLEY HOTEL, ESTES PARK, SEPTEMBER 9, 10, 11, 12, 1952.

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General Counsel: Mr. J. Peter Nordlund, Attorney-at-Law, Denver.

STANDING COMMITTEES

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Credentials: Irvin E. Hendryson, Denver, Chairman; others to be appointed.

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Sub-Committee on Legislation: (to be appointed).

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Sub-Committee on Weekly Health Column: (to be appointed).

Sub-Committee on Monthly Health Article: (to be appointed).

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NEXT ANNUAL SESSION, SALT LAKE CITY, SEPTEMBER, 1952

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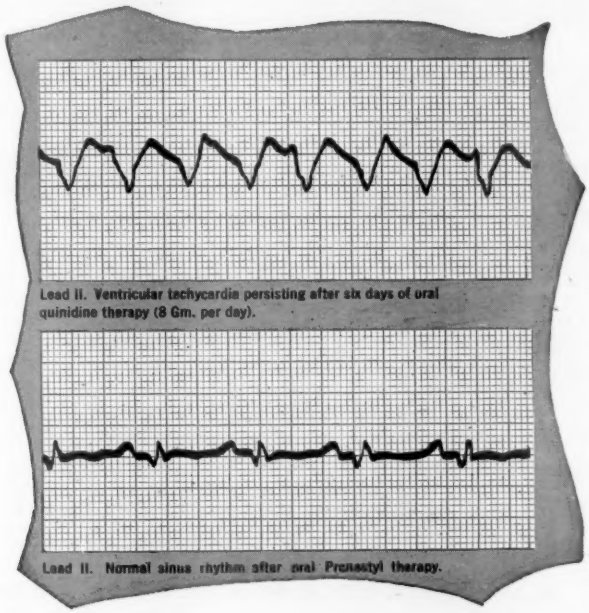

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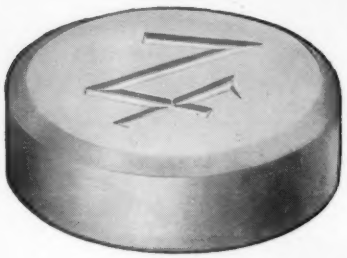

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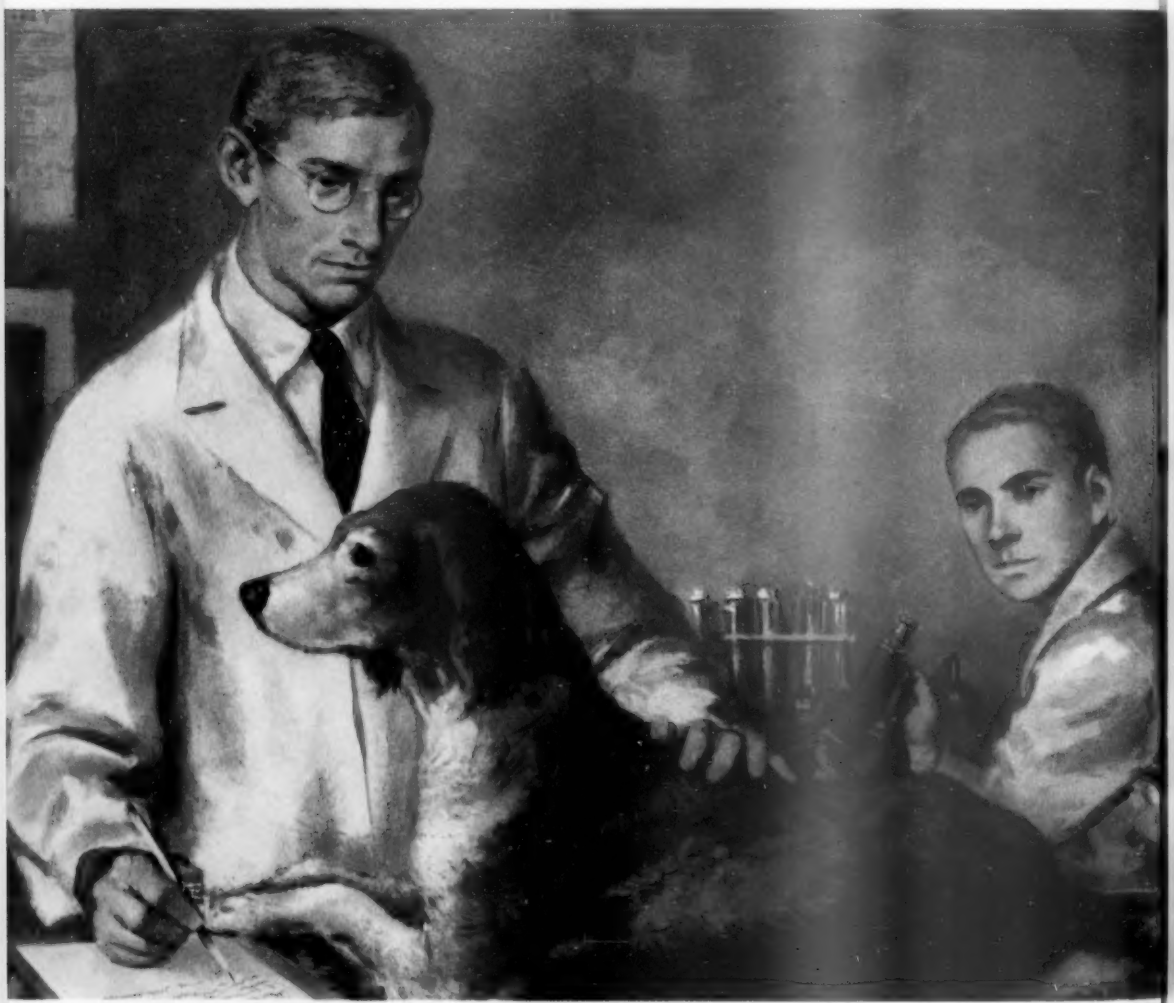

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Rocky Mountain Medical Journal
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OCTOBER
1951

Editorial

Medical Care and The Pioneer Spirit

WHEN a stunting airplane went out of control at a Flagler, Colorado, air show on September 15 and rained death and destruction on the peaceful prairie air field near the small community, members of the Eastern Colorado Medical Society were equal to the occasion.

The terrible tragedy claimed twenty lives and injured two score, many of whom were children and all of whom were known to one or more physicians in the rural area. With awful suddenness, here was a medical emergency and it happened in one of those sparsely settled areas which the politicians like to cite as "lacking proper medical care."

But the sturdy folk of eastern Colorado have long cared for their own. They helped settle the West and they have endured good years and bad, and dust and drouth. And they have never been lacking in spirit. And they had a good neighbor policy long before it became an international by-word.

Within a matter of minutes the first injured were in the Flagler hospital and a telephone operator was on the line flashing the word to Burlington and Limon and Cheyenne Wells and other towns across the broad prairie with an appeal for doctors and nurses. And while Dr. W. L. McBride and Dr. John C. Straub of the Flagler hospital ministered to the critically injured and the dying, their colleagues rushed in to help.

From Burlington in his airplane, with a nurse, came Dr. R. F. Courtney in eighteen minutes. Dr. Leonard Myers and Dr. Jerome L. Keefe drove the 100 miles from Cheyenne Wells in ninety minutes. And the others came and they brought nurses, plasma, sutures and dressings. They moved fast and their only thought was to get to Flagler as quickly as possible. In ninety minutes every member of the district medical society was in Flagler and at work!

Meanwhile, ambulances converged on the scene from nearby communities and a hospital employee from Walsh flew in with more plasma. Several western Kansas physicians heard of the emergency, and they drove rapidly to Flagler to help their Colorado colleagues. As a result, all of the injured received adequate, prompt medical care.

It was a tribute to the resourcefulness of the people of Colorado's eastern plains and to the doctors and nurses who did so much for the victims of an unfortunate tragedy.

They have the pioneer spirit and we are proud of them.

1951 Diabetes Detection Drive

DIABETES WEEK (November 11-17) will again spearhead the American Diabetes Association's nationwide Diabetes Detection Drive—the fourth sponsored by the association. The year-round Diabetes Detection program, approved by the American Medical Association, is the only broad health education and case-finding program developed exclusively by the medical profession. Its objectives are twofold—to further the detection of diabetes among the public and to disseminate general information about the disease.

Twenty-eight State Medical Societies, over 500 County Medical Societies, and our twenty-eight Affiliate Associations have already established Committees on Diabetes. In the five states covered by the Rocky Mountain Medical Journal, the following have already set up Committees on Diabetes for this year's drive:

Colorado: State Medical Society (com-

mittee chaired by Dr. Paul Sheridan), nine County Medical Societies.

Montana: Three County Medical Societies.

New Mexico: State Medical Society (committee chaired by Dr. John H. Dettweiler), six County Medical Societies.

Utah: State Medical Association (committee chaired by Dr. Kenneth B. Castleton), six County Medical Societies.

Wyoming: One County Medical Society.

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Homotransplantation of the Kidney

ABOUT a year ago we presented in these columns a description of a case wherein transplantation of a human kidney had apparently been successful. The recipient's life had apparently been saved and kidney function was essentially within normal limits. The case had been given wide publicity and was described in both lay and scientific journals. Our editorial predicted that favorable publicity was premature, for human transplantation of tissues or organs has been singularly disappointing. Exceptions are principally tissues which can be tolerated as benign foreign bodies, such as cartilage, or serve temporarily as framework ultimately replaced by the patient's living tissues, such as bone. We enumerated many of the complications which beset transplanted homogenous tissues and bring about their absorption, expulsion, or replacement by fibrous tissue.

A recent issue of the J.A.M.A. (September 1, 1951), presented the supplemental report of the case in question, the preliminary report of which had been in the Journal of November 4, 1950. The operation had been performed on June 17, 1950, at which time a kidney from a woman of the same blood and Rh type was transplanted to the renal pedicle of the patient following removal of a polycystic kidney. There had been an end-to-end anastomosis of renal vessels and ureter; re-establishment of the blood supply to the kidney was noted. Urinary output was above normal at first but reached normal level within two weeks. On the fifty-second postoperative day indigo carmine dye emerged from both ureters following parenteral injection; ten days after that, incomplete stricture of the ureter was demonstrated by x-ray. An operation was done promptly and the kidney appeared essentially normal, but there was an adjacent abscess. This was drained and cleared up, but the ureteral stricture was progressive. On April 1, 1951, surgery was again performed, and it was noted that the homograft had diminished in size, ureteral and pelvic structures were absent, and the organ was brownish-red in color, possibly alive but not producing urine. Thus it appears that some of our editorial predictions had occurred and the operation should be considered interesting but not successful.

The above experience indicates one of the evils of preliminary reports, especially when they reach the lay press and the ultimate consequences are subdued or overlooked. It is not the fault of our profession that reporters inflate and glamorize their material to make it "sell better." We could, however, be more patient and discreet in releasing information for general exploitation. Within our own meetings and publications, we can tell the whole truth but should be equally sure that supplemental and final reports are given the same publicity and circulation as the initial work!

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Plan Now to Attend Clinical Session

IT IS time to set aside those dates of December 4 to 7 already. Those are the dates of the American Medical Association's Clinical Session to be held in Los Angeles, and hundreds of our Rocky Mountain physicians should attend.

The program will be of interest to every doctor, but especially to general practitioners. And, as always, A.M.A. scientific exhibits will themselves provide a concentrated postgraduate education worth the trip and the full four days of the meeting.

We will publish more details next month, and of course the Journal A.M.A. will carry the complete program. But mark off those days on your calendar now.

Original Articles

PRESIDENTIAL ADDRESS*

HARRY C. BRYAN, M.D.
COLORADO SPRINGS

I want you to know that I am very proud and happy to assume the Presidency of the Colorado State Medical Society.

It is a privilege for one to have the honor of following the distinguished previous Presidents whose untiring efforts have made this one of the nation's outstanding state medical organizations.

As I assume this high office I am acutely aware of the responsibilities involved as our profession moves into a crucial year which will bring added challenges to serve medicine and the public interest.

This is a memorable occasion for me and I want to pledge to you my best efforts for the continued progressive growth of this organization.

I want to commend Dr. Ervin A. Hinds, my predecessor, for a distinguished contribution to medicine and to the people of Colorado through his enlightened leadership during the past year.

It is also my pleasure to thank Mrs. Harry Gauss, President of the Woman's Auxiliary, and her associates for their untiring efforts.

However, I must also say to you that activity in organized medicine is not confined to the officers. Many sincere men and women served on the various boards and committees of the State Society during the year, and gave generously of their time to advance the aims and objectives of this organization. We are indebted to them for their valuable assistance.

As we view the year ahead I believe we must devote more time to human relations and to public relations. It is essential that we tell our story well for a number of reasons, including the very sound one of public service. I am convinced that the good medical care in our time will achieve maximum success only if the public is kept informed of developments. It is therefore my conclusion that an adequate public relations program actually permits us to render a higher type of medical care than would otherwise be the case.

Our patients today are healthier than they have ever been. They are vitally interested in matters pertaining to medicine and health and they look to the medical profession to keep them properly informed. As physicians, we know of the many wonderful gains in medicine but I fear that they soon become routine to us and we perhaps neglect opportunities to make sure that our patients are aware of the vast changes which are taking place. Here in the field of good human relations is an opportunity for us to make a valuable contribution to better health.

I want to stress to you the value of community leadership by doctors. Every doctor should aid in safeguarding the health of his community by helping to eliminate health hazards. He should also be active in community affairs and local politics, if you please. He should be willing to serve on a city or county governing body, or a school board, and where indicated he should be willing to be a candidate for local or state office. Support of public health programs, new hospital construction and other things which contribute to better health should attract his interest. And above all he should be active in his local medical society and should help guide its interests to the end that both medicine and the community are bettered by its activities.

The State Society, reflecting the progressive progress of its component groups, must constantly endeavor to correlate the ob-

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jectives of organized medicine with the public interest. We have made a great deal of progress in Colorado, but there is room for broader activity in several areas. I believe the most important matter requiring our concentrated efforts at this time involves the spread of voluntary health programs so that the people achieve a fuller measure of financial protection. We will lend our continued support to the expansion of all sound voluntary health insurance programs. Although 72,000,000 citizens now have some form of protection, we will not be satisfied until the benefits of voluntary insurance reach many more people, and until the scope of insurance is broadened to afford maximum benefits within reach of the average United States pocketbook.

As we look ahead it seems to me that there are activities and problems at both the national and local levels which demand our continued attention. We should support the American Medical Association in its many worthwhile activities including its efforts to develop voluntary funds with which to assist our medical schools.

One of the great problems our profession must face, now—is that of financing medical education.

I have been greatly impressed by the publication called "Financing Medical Education," issued last May by the Commission of Financing Higher Education. That commission, composed of the presidents of a half-dozen of the nation's leading universities, and several lawyers and great industrialists, does not include a single doctor of medicine in its membership; yet, it sees eye to eye with the policies which our own State Society and the American Medical Association have advocated. The commission opposes federal subsidy of medical education, in no uncertain words. But it warns the nation, and warns you and me as doctors, that federal subsidy and control of medical education may yet fasten itself upon us if other and better means are not found to finance our schools. This is partly the job of philanthropic foundations, partly the job of industry, partly the job of many others and very much the job of state legislatures where state schools are involved —but it is also the responsibility of the medical profession, you and me, and it is especially our job to lead the others. The commission cautions medical schools against extravagance and warns that many of them must learn to practice economies they seem to have forgotten, but it points out that even with these economies every good medical school in these United States needs better financing than it now possesses.

I urge every member to get and study the pamphlet of the Commission on Financing Higher Education—I have asked our Executive Office to obtain a supply to fill your requests—read it, think what it means to you, what it means to your sons and daughters and future generations. And then, I urge you, every doctor in Colorado, to dig down as deeply as you can and contribute annually to the American Medical Education Foundation that was set up for this purpose by our own A.M.A.

So long as America is still America, we **dare** not and **must** not abandon our state and local privileges of controlling education, medical or otherwise, to a centralized federal administration. Nationally socialized education would be just as bad as socialized medicine. Let's keep America free, and let's spend some of our dollars to do it.

Through our educational campaign we have brought the true story of American medical progress to the people and they have evidenced their dislike of the Washington schemes to socialize both our profession and the patient. We must continue to discharge this duty to keep our people informed.

We must also maintain our scientific gains, again in the public interest. These scientific accomplishments are a matter of record and the American people well know that theirs is the healthiest large nation in the world. They know that 20 years have been added to the average life span since 1900; that many diseases have been conquered and most of the others reduced to a point where we can be hopeful of victory in the near future; that new medicines,

drugs and techniques daily save thousands of lives and reduce suffering . . . and that we have in America the finest medical schools and hospitals and professional personnel in the world.

Great strides have been made in the fight for better health and against disease by the American team which includes medical schools, nurses, dentists, physicians, druggists and technicians and scientists.

Thus it is that the honeyed words of the politicians fail to lure our people into the false Utopia offered by those who would deceive by promising "free medical care for all" through the medium of another burdensome tax. When President Truman and Oscar Ewing, sensing defeat of their pet scheme, try a new line by declaring that they will go along with any plan "better than theirs" . . . or even one that is "almost as good" . . . they are talking foolishly and people know it.

The facts are that the best plan is the one we now have. It can be improved and we must help do it. We have a democracy and a free people and within that pattern, working together as a team, we have done so much more for health than any other nation that the politicians are wasting their time when they talk about a "better plan."

They should know, too, that the people will not adopt any program that will permit the present national administration with its bungling, its ineptness and its camp followers to interfere with the health of this nation.

There is no place in American health care for fur coats and deep freezers and political favoritism.

While thinking about such matters, may I urge all of you to join me in watching—as I am doing with a great deal of interest—the great test that is now under way between the State of Indiana and the federal government. I refer, of course, to Indiana's demand that it publicize the names of recipients of public welfare funds, and the federal insistence that federal grants for such purposes will be withdrawn. Many legal technicalities are involved which we cannot take time to consider today. But all of us are keenly aware of great and innumerable and almost criminal abuses which the light of publicity could end. I am asking our incoming Public Policy Committee and our legal advisers to consider carefully the possibility of proposing to our own state legislature a bill similar to the recent Indiana law. Several other states are thinking hard about this problem, which is a problem of waste, tragic and horrible waste, of our tax dollars. Think of it, that in today's postwar prosperity our governmental agencies spend more to support the supposedly indigent than was spent in the depth of the great 1933 depression! All congratulations to Indiana people and her state government for asserting her state's rights against federal bureaucracy—may Colorado do the same!

Our people are aware of the danger of permitting those who at this moment are wasting the vitality and the financial resources of the last great free nation on earth to tamper with life and health as though they were pork barrel privileges.

Our primary objective is to protect and preserve the health and medical welfare of our patients and this we will continue to do, I promise.

Among the things I hope our organization can promote in the very near future is a revision or modernization of what we call the coroner system.

Colorado's laws as well as those of many other states are archaic in this connection. It is little short of ridiculous that our counties conduct a regular political contest at general elections to decide who shall hold the office of coroner, and then usually choose for that office someone who is not a physician.

The forward-looking legislatures of several states have revised their laws to create a modern system of qualified medical examiners to replace the archaic coroner idea, and have taken the important work of determining the cause of death in cases where the deceased did not have licensed medical attention completely out of politics. They have instead put it in the realm of science, where it belongs.

I believe we can sense a readiness in our own Colorado legislature to accept sci-

entific advice in such matters, and I, therefore, hope that this may become a continuing project of our Public Policy Committee until the desired goal is attained.

We will continue, through our State Society and the A.M.A., to favor the training of more doctors but not at the sacrifice of existing standards of quality. Although a few misinformed people continue to cry "doctor shortage," the facts are that we do not have such a shortage and we will not have one. There are now more students preparing for careers in medicine than ever before. The freshman class of 1950 was in excess of 7,000, that of 1951 about 7,400, an all-time record for each year. We have 79 Grade A medical schools and several new ones are being built. By 1960, we will produce 30 per cent more doctors than we did in 1950. As Paul deKruif noted in a national magazine article some weeks ago, "our present institutions have increased their freshman enrollment during the past decade by an amount equivalent to the opening of fifteen new medical schools."

While the number of doctors is increasing in proportion faster than the population, we do have shortage areas in some states and we have cities with an over-abundance of physicians. This is a condition that cannot be altered by Washington edict, but which will be and is being changed by economic factors plus the willingness of communities to attract physicians to places where they are needed. Many states have active programs to assist physicians in locating in smaller communities, among them Colorado. In the past few years our Society has helped nearly 100 doctors find locations in which they are now providing medical care for Colorado citizens.

I mention these things in some detail because they are significant landmarks of our progress. We must know the facts and the public must share this knowledge with us in order that the unjust accusations occasionally hurled at the medical profession can be successfully rebutted. There are those who would weaken our position and by so doing lend aid and comfort to the enemy. Such attempts must be resisted with all vigor.

The active programs of the Colorado State Medical Society must be maintained and expanded where necessary. To do this, we as members should insist that our Society not only be adequately financed through annual dues, but we must encourage more members to take an active part in Society affairs.

Any organization like ours must see that its membership is kept well informed concerning the activities of the officers and the committees and concerning the uses to which the organization's funds are put. Likewise, any organization like ours courts eventual stagnation if it fails to promptly indoctrinate its newest members and bring about their active participation. Our Society has done much better than most medical organizations to avoid both these pitfalls, but I am inaugurating two new projects which I believe will further insure our continued success.

First, let me say that our Rocky Mountain Medical Journal, our "Colorado Medicine" news-letter, our frequent bulletins from committees and officers, have long been among the best of their kind. We are all proud of them. But most doctors are busy people so we must forgive them if in the mass of mail that reaches their desks an important communication from their State Medical Society is occasionally overlooked and discarded. We come down to the plain fact that there is no substitute for word-of-mouth communication—no substitute for conversation, or for sitting down with a colleague and asking and answering questions. Some of the latter is accomplished by visits of state officers to county societies, but this is not enough, and official visits are already enough of a burden on your elected officers that they cannot be multiplied.

So, I am creating what I shall call the "Planning Committee," a rather large committee composed mostly of men already very familiar with the internal operations of our Society, because of recently holding state office, plus some others who have not had such experience but who will enjoy this kind of work. I shall hold this committee responsible for word-of-mouth discussion

of State Society affairs at least once, preferably oftener, during the next year, with every member of our Society. I shall ask the committee then to report to the Board of Trustees with concrete, constructive suggestions for betterment of our organization work, carefully thought out from its statewide study of questions and suggestions from the whole membership.

To bring our newest members into earlier realization of their responsibilities to their profession, and quicker appreciation of the values of medical organization, I have addressed a letter to every physician who became a member of the Society within the last year. I enclosed an outline of the duties of each of our committees, and I invited each new member to indicate his preference, if he would be willing to serve in committee work. Response has been most gratifying, so that I believe at least half of our new members will get a taste of medical society activity, right from the inside, during my administration. I plan to follow this up every month as young doctors join, and as older men may transfer into our Society from other states.

Doctors are now in politics and this is as it should be. But please bear in mind that there are responsibilities which we must discharge as good citizens over and above our duties as professional men. We must not only continue to support our broad public relations and community service programs, but we must constantly be alert to insure that our patients receive not only the best medical care but that their welfare is protected through the advancement of proper activity in such fields as public health, rural health and sanitation, and preventive medicine.

We must realize that participation in one political campaign does not conclude our activities or our obligations. We must know that the people respect us and look to us for guidance not only in matters of health and medicine but in connection with state and community affairs. More physicians should take an active part in politics at all levels. We need more doctors in the General Assembly, on school boards and city councils, as active participants in the P.-T.A. the Chambers of Commerce and in the numerous other community and civic groups and organizations.

The time has passed, gentlemen, when we can say that "we are too busy." We just can't afford to be too busy. We must take a more active part in politics in both major parties, in our state and local medical societies, and in community life.

Senator Richard M. Nixon of California sounded the challenge at the A.M.A. Session in Atlantic City in June when he told a group of doctors that "you owe it to yourselves and to the nation to stay in politics."

I must say to you that this is the time for constructive action, based on the principles of the American Medical Association and the Colorado State Medical Society. We must continue to broaden the base of medical care, to give to our patients the highest type of care and treatment, and to expand our public relations activities.

You cannot now afford to relax. Medical societies are no longer merely scientific groups. The problems of the people in health and medicine and, if you please, in good government, are our problems, too.

We must broaden not only our public relations activities but our own personal knowledge of the importance of human relations. Only by working more closely with others can we discharge the maximum of our responsibilities. It is essential that we continue to render the best service of which American medicine is capable, and further that we at all times tell our story well. An informed public is essential to attainment of our aims and objectives.

As a profession, we enjoy scientific and academic freedom to an extent unknown in most countries. As citizens, we live and benefit from the freedom of a great democracy, but we do not do much to safeguard that freedom. As doctors, we have lived up to the Hippocratic Oath and we have had a part in bringing the finest medical care the world has ever seen to our patients. As citizens, however, we have often been found wanting.

We must realize that the attacks on American medicine are a sign of the times.

They are to some degree a deviation of the Hitler technique of divide and conquer. They are often inspired by those who want to see medicine socialized and thus soften the armor of democracy so that business and industry and transportation and communications can ultimately become subservient to the state.

As Dr. Norman Vincent Peale said in Denver some weeks ago, "there is nothing **wrong** with America!" We must, he said, have a revitalization of the spirit that made this the greatest nation in the world and we must fight down those who endeavor to undermine our way of life by constantly belittling what we have done. I say to you also that there is nothing **wrong** with American medicine. It can and will be improved. It is far and away the finest the world has ever seen and its accomplishments rank with those of free America. Together medicine and America stand at the top; there is nothing anywhere even close to either of them.

I hope you are proud of this and that you will from here on be prepared to defend your country and your profession as zealously as you can. I hope that you will resist with all your vigor attacks on either from any quarter. This is no time for apathy, no time for "business as usual." As doctors we have a big stake in maintaining freedom in America, and we must not only think of the freedom of our profession but also the freedom of our patients and our great nation.

It is high time that we exert more effort in behalf of better government and in support of our freedoms. We must sustain those men and women in government who are efficient, honest, and sincere, and we must fight to remove those who do not measure up to those high standards. It is largely our fault that we as a people are being led down devious paths, confused, overtaxed and over-governed. We have surrendered our rights because we have become apathetic.

We are running out of time if we want to remain free. We need today, above all else, men and women of courage and vision who will s p e a k out fearlessly and courageously for what they know to be right.

We talk a great deal about freedom but we do not do very much to preserve it. We sit on our hands and permit the ever-willing politicians to guide our way of living according to their own v i e w s. We supinely accept higher taxes, more and more regimentation and we do nothing about it. We can't maintain that sort of an attitude forever, or else we will be under the heel of a socialistic state and then it will be too late.

We need a revival of the spirit that made America great. This country did not reach its present heights, as a young nation, by lacking wisdom and leadership and fighting spirit. What do you suppose the men and women who crossed the plains and the rivers and the mountains less than 100 years ago, to conquer the wilderness, would say today if they could come back and view this sorry scene?

What would they say to this business of coddling and regimenting a free people? How long do you think they would tolerate little men in high places, edicts from Washington and, in a lesser measure, from state and local governments? What would their answer be to those who would substitute the welfare state for the sort of freedom we too often take for granted?

Ours is a rich heritage, made available to us by the blood and sacrifice of our forefathers. Too many Americans, physicians and laymen alike, have become soft. They have taken too much for granted. They have shirked professional and community responsibilities, and every time they have done so a measure of freedom has been lost. We have now come to the place where we either dedicate our best efforts in behalf of democracy, or by default permit further inroads by advocates of the welfare state. We need now, courage, initiative and spirit to keep America great, and physicians must and will accept their proportionate share of the responsibility.

As doctors we are expected to continuously demonstrate the qualities of leadership compatible with the high ideals of our

profession. As Americans who love freedom we must be willing to work hard for it, both in our medical organizations and our communities.

We must have faith in God and faith in ourselves.

The destiny of our country and our profession is in your hearts.

CEREBRAL PALSY: SPASTICITY

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The modern neurologic concept of spasticity was recently summarized by Magoun and Rhines in their monograph, "Spasticity —The Stretch Reflex and Extrapyramidal Systems." Hyperactive deep reflexes, clonus, and increased stretch reflexes characterize the spastic muscle. Contraction of a normal muscle produces action currents which are different for the upper, middle, and lower thirds of the muscle tested. These action currents are asynchronous or out of phase. In the spastic muscle, contraction produces a pronounced action current similar for the three leads or synchronized. Spastic antagonists are caused to contract reflexly by irradiation or by secondary mechanical stretch. This process then works in reverse in diminishing repetitions.

Spasticity is also characterized by augmented and prolonged tendon reflexes and an enlarged reflexogenic area. Slight stimulation of the plantar surface of the foot augments the spasticity of the calf group. Stretch reflexes are subject to augmentation and inhibition by the central nervous system. Centers and pathways of augmentations are show in Fig. 1; of inhibition, in Fig. 2. Spasticity should not be confused with the other motor types of cerebral palsy, namely athetosis, flaccidity, rigidity, tremor and ataxia.

Muscle Testing

The muscle examination of the spastic patient requires careful consideration of several points The examiner must differentiate between voluntary resistance and the stretch reflex. The stretch reflex is automatic and will occur every time the muscle is stretched. The muscle should be stretched repeatedly, at the same time distracting the patient's attention, to rule out voluntary resistance imitating the stretch reflex. Tension athetosis is produced by the athetoid patient voluntarily stopping undesired motion of the athetoid extremity. By shaking the extremity, the tension can be shaken loose. The spastic limb cannot be shaken loose because the stretch reflex is automatic and will resist and maintain the spastic position.

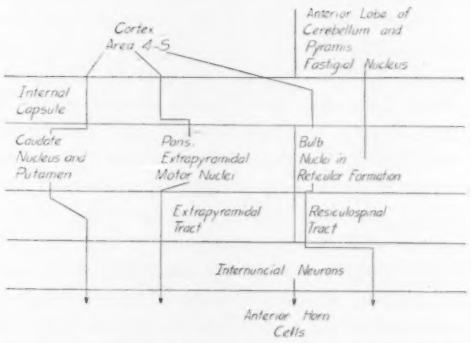

Fig. 1. Diagram of nuclei and tracts which inhibit the stretch reflex.

The zero cerebral (OC) muscle is one over which the patient has no voluntary control. Spastic muscles opposed by zero cerebral antagonists must be carefully examined if extensive neurectomies of the spastic group are planned. For example, complete obturator neurectomy in the presence of zero cerebral hip abductors would leave a limb without sufficient power in adductors or abductors. Some spastic patients will have spastic wrist flexors, but can voluntarily extend the wrist. These patients are much better off than those with zero cerebral wrist extensors. In testing the extensors in an ankle with spastic equinus, overcome the stretch reflex manually

*From the Carrie Tingley Hospital for Crippled Children, Hot Springs, New Mexico.

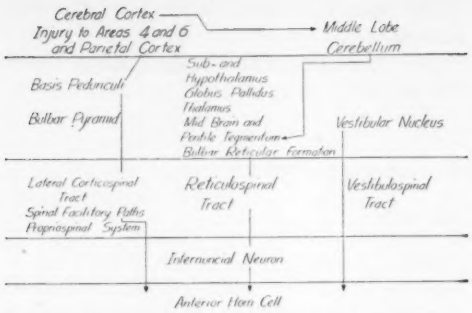

Fig. 2. Diagram of nuclei and tracts which facilitate the stretch reflex.

by placing the ankle at 90 degrees, then ask the patient to hold that position. If the anterior tibial and toe extensor tendons are observed to become prominent, voluntary control of the extensors is possible, and, although control might be poor, the muscle cannot be called zero cerebral. These poorly controlled antagonists must be trained to contract, first by making the patient aware of the sensation of contraction; second, by active contraction on the horizontal plane; third, by active contraction against gravity and, finally, progressive resistive exercises, until dynamic balance is obtained. The zero cerebral muscle is trained to contract by indirect means reflexly by having the patient contract a certain muscle voluntarily. For example, voluntary contraction of the hip flexors will sometimes cause reflex contraction of zero cerebral ankle extensors. Voluntary extension of the opposite normal ankle or wrist will produce extension reflexly in the spastic ankle or wrist. Abduction of the shoulder against resistance has produced reflex extension of zero cerebral wrist extensors.

The same muscle chart that is used for testing patients afflicted with poliomyelitis may be used, provided the individual muscles are listed, and additional designations added: "Normal—N; Cerebral zero—OC; Spastic (stretch reflex)—S; Clonus—CL; Contracture—CO." The examination of the spastic patient is not complete without a thorough muscle examination.

It is generally recognized that the conservative treatment of spastic paralysis is the treatment of choice. The recent book by Paula F. Egel, "Technique of Treatment for the Cerebral Palsy Child," gives an excellent introduction to this difficult subject. The following is an outlined summary of the modalities used in the treatment of spastic paralysis:

1. Massage: A deep massage is of value for cerebral zero muscles, but should not be used on spastic muscles. The OC muscles should be held in a relaxed position while the massage is being carried on. They should also be supported in a relaxed position so that they will not be overstretched by spastic antagonists.

2. Passive Motion: It is essential that the joint be put through a full range of motion slowly without causing a stretch reflex. The spastic muscle should be completely stretched out and then held for about twenty seconds in the stretched-out position. If a stretch reflex is obtained, the stretching is being done too rapidly.

3. Active Assisted Motion: Use a counterbalance system to assist the limb. The exercise should be performed slowly so as not to elicit the stretch reflex.

4. Active Motion: Work for a smooth full range of motion against gravity. Do not allow the stretch reflex to occur.

5. Progressive Resistive Motion: After active motion can be performed well, add weights to the limbs, using progressive resistance technic to help strengthen antagonists to the spastic muscles and OC muscles. Do not give spastic muscles the progressive resistance until full dynamic balance has been obtained.

6. Conditioned Motion: These should be used on the spastic after the passive and active motions can be performed satisfactorily. Colby's Rhymes are sung by the physical therapist accompanied by passive alternate motions—later, active motion.

7. Automatic Motion (confused motion): According to Doctor Phelps, there is always an automatic reflex somewhere that will produce the needed motion. This pathological overflow is utilized for OC muscles. Samples: (a) gluteus medius OC—resistance to deltoid; (b) wrist extensors OC—resistance to extensors of the opposite fore-

arm; (c) wrist extensors OC—resistance to flexors of elbow, same side.

8. Combined Motion: This is an advanced modality. Examples: (a) finger flexion combined with wrist extension; (b) elbow flexion with supination; (c) elbow extension with pronation; (d) wrist flexion with finger extension; (e) finger flexion with forearm supination; (f) finger extension with forearm pronation; (g) forward flexion of shoulder with elbow extension; (h) internal rotation of the shoulder with elbow flexion.

9. Rest. This modality is accomplished by braces, splints, special chairs, and is used from the beginning with every type of cerebral palsy.

10. Relaxation: Produce disturbances such as hand clapping, new situations, etc., to condition spastic patient to relax despite the disturbance. This should be carried out with patient's full knowledge so as not to frighten him.

11. Balance: This is divided into head and neck balance, sitting balance, knee balance and standing balance. Special chairs, crutches, skis, foot paddles, stabilizers and standing tables are used for this in progressive order.

12. Reciprocation: This is an advanced modality. Parallel bars, abduction board, graded skis, tripod crutches, are used, as well as conditioned motion for this purpose.

13. Reach and Grasp: This modality deals with the arms only and is an advanced modality used by the physical therapist. Begin by combining two motions, then there and four motions, coordinated to make reach and grasp possible.

14. Skills: Teaching the child to do all necessary actions such as feeding himself, dressing, brushing and combing hair, brushing teeth.

The spastic patient is ready for the occupational therapist after controlled active motion is well performed. Physical therapists and occupational therapists must work together with other members of the cerebral palsy team to produce good results.

The physical therapy prescription should be written by the orthopedist and the prescription changed as the patient improves. The following prescription is for an untreated child, age five, with a right spastic hemiplegia having innervational overload of the calf, hamstrings, hip flexors and internal rotators. The right arm shows flexion and ulnar deviation of the wrist, pronation of the forearm, flexion of the elbow and mild internal rotation of the shoulder.

> Name: Nancy Smith. Diagnosis: spastic hemiplegia, right. Age: 5. Address: 510 A Street, City. Treatment: passive motion. Time: 20 X; hold 20 seconds. Specifications: stretch calf, hamstrings, hip flexors and internal rotators, right leg. Stretch wrist flexors, adductors, elbow flexors and internal rotators of shoulder, right. Do not elicit stretch reflex. Hold in stretched position for 20 seconds.

After six weeks of passive stretching, active motion is started, assisted when necessary by automatic motion.

> Name: Nancy Smith. Diagnosis: spastic hemiplegia, right. Age: 5. Address: 510 A Street, City. Treatment: action motion. Time: 20 X each muscle. Specifications: Continue with passive stretching in Rx No. 1, and start active motion with each muscle.
>
> Treatment: automatic motion. Time: 20 X. Specifications: Apply resistance to flexed right thigh.

Braces for Spastics Are Different

The fundamental reason for a brace on the spastic is to maintain normal position of the limb by counteracting the imbalance due to innervational overload. Spastic muscles must not be allowed to develop contractures, or overstretching and disuse atrophy of antagonists will result. Ankle extensors, quidriceps and hip abductors are often thought to be zero muscles because they have been so long opposed by uncontrolled contracted spastic antagonists. Persistent, early control of the spastic muscle by properly fitting braces will make the spastic muscle more docile and easier to train. The uncontrolled spastic muscle will, in time, become stronger with a strong stretch reflex to which is added contracture. The whole philosophy of treatment is based on attaining dynamic balance and coordination. Braces are of great help, but only if properly prescribed, built, fitted, applied and used early in the life of the spastic patient. The shoe should be of leather with the tongue extending to the toe. If this

type is not available, cut out the toe of the shoe. Have the shoe-man replace the small eyelets with extra large eyelets for ease in lacing. The foot is to be placed in the shoe with the heel down in place and the toes in normal position. If the heel is not seated in the shoe and the toes are doubled under or cramped, the child will not be able to cooperate. If the heel counter is too hard, cut it out. Be sure the inside of the heel is smooth or heel blisters and ulcers will result. A snug fitting sock should be worn and the inside of the shoe powdered.

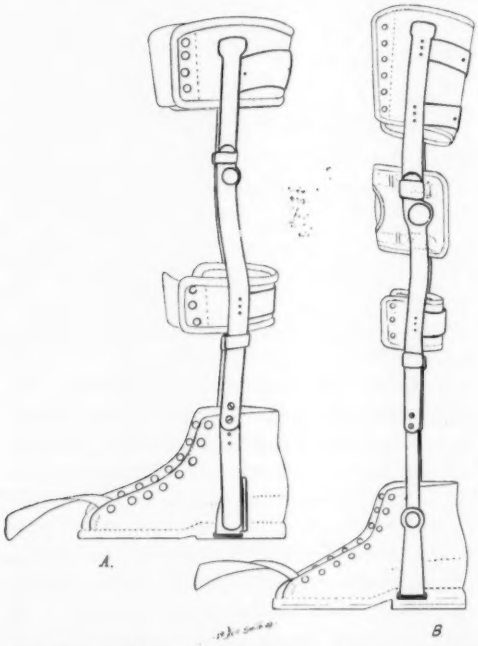

Fig. 3. (a) Long leg brace, drop ring knee, drop foot caliper ankle with hole in flange. (b) and (c) Long leg brace with drop ring knee, knee cap, drop foot slot caliper ankle.

Braces for spastics should be calipered. The round caliper for young children, Fig. 4(a), and slot caliper with ankle joints for larger children and adults, Fig. 3(b). Caliper braces allow the shoe to be removed so that it can be properly and easily applied. If the shoe is permanently attached to the brace, it is very difficult to insert the foot and get the heel and toes down into proper position. Those who have tried it know. When the shoe is properly applied and laced, attach the brace. Repeat this each time the shoes and braces are worn.

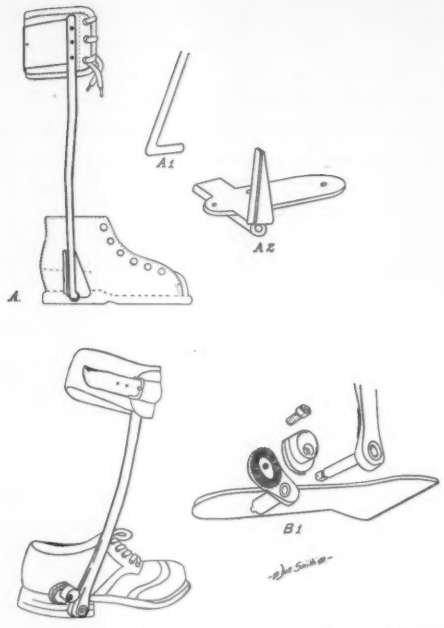

Fig. 4 (a) Short leg drop foot brace, round lateral bar. The round lateral bar is bent at 90° (a-1) and fits in metal tube running through heel. (a-2) Foot plate with drop foot flange and metal tube. (b) Perlstein type brace. (b-1) Assembly showing foot plate to ratchet, cam, set screw and metal upright with axle set at 90° to fit in tube.

Patients having spastic calf groups should have a metal foot plate extending from the stirrup to behind metatarso-phalangeal joints. This prevents the strong thrust of the spastic calf from breaking the sole just in front of the stirrup and keeps the forefoot from dropping. The Perlstein type brace, Fig. 4(b), shows this feature.

Shoes without built-up heels require a special stirrup, Fig. 5(a), as the heel will not accommodate a metal tube.

The drop foot calipered brace should be ordered for spastic equinus. If the foot is in equinovarus, a medial bar brace is ordered with a varus strap (from shoe to inner bar). The lateral bar brace with valgus strap (from shoe to outer bar) is ordered for equinovalgus. If the brace is to extend above the knee, a double bar brace is ordered. The Perlstein type brace is adjusted with a screwdriver to the position of 90 degrees or into dorsiflexion as tolerated. This made possible by a small ratcheted cam applied against the upright. The Phelps type brace, Fig. 4, which has a round ver-

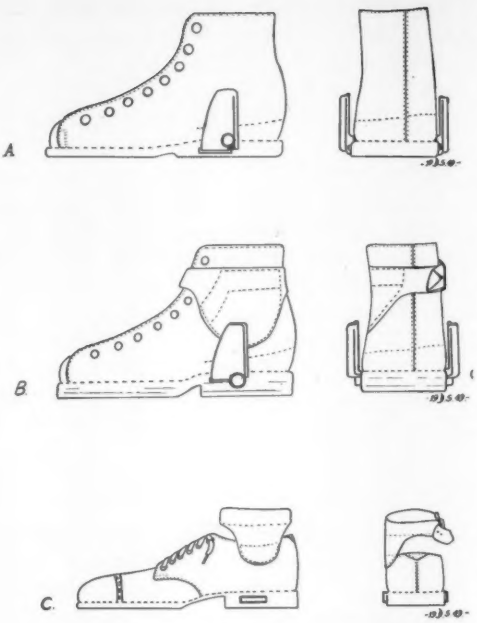

Fig. 5. (a) Side and rear views showing hole in drop foot flange which will engage the axle on upright. This type is used when the heel is not thick enough to allow a tube. (b) Side and rear views of drop foot flange with tube through heel of shoe with valgus strap. (c) Side and rear views of shoe with metal slot to engage upright of slot caliper brace—valgus strap attached.

tical bar, may be periodically adjusted with bending irons to increase dorsiflexion of the ankle.

For the spastic patient with innervational overload of hamstrings, the knee joint of the brace is quite conventional with a drop ring lock on one of the various mechanisms to lock the joint at 180 degrees. Phelps places ball bearing joints at the knees, hips and at slot calipered ankles. A leather knee cap is needed.

The patient with spastic paraplegia requires special hip joints. The common combination of flexion, adduction, and internal rotation requires the use of a limited motion ball bearing joint so the hip can move from slight extension to sufficient flexion to allow a normal step. Lateral stresses, put on the brace at the hip joint, make ball bearings at this joint very useful. These joints and uprights can be purchased from prosthesis manufacturers and incorporated into the brace. To control scissoring and unwanted rotation of the lower extremities, a rigid pelvic band extending from one anterior superior spine to the other is a necessity. The flexible pelvic band will not control scissoring. Well made braces should stand by themselves with the shoe sole flat on the floor. The inner uprights should not touch.

The spastic patient who persistently bends forward at the hips needs two metal uprights extending from the right pelvic band to the shoulders with shoulder straps incorporated. This type of patient is greatly benefited by a long period of standing table and parallel bar exercises before attempting crutch walking. At first, hip motion only is allowed.

The spastic upper extremity requires mobility and the bracing problem has not yet been satisfactorily solved. The common position of flexion and ulnar deviation of the wrist, pronation of the forearm, flexion of the elbow and internal rotation of the shoulder cannot be controlled by any one brace and still allow useful activity of the upper extremity. The Funsten type splint, Fig. 6, is useful in controlling the wrist and forearm but does not control the elbow and shoulder. Fortunately, the position of el-

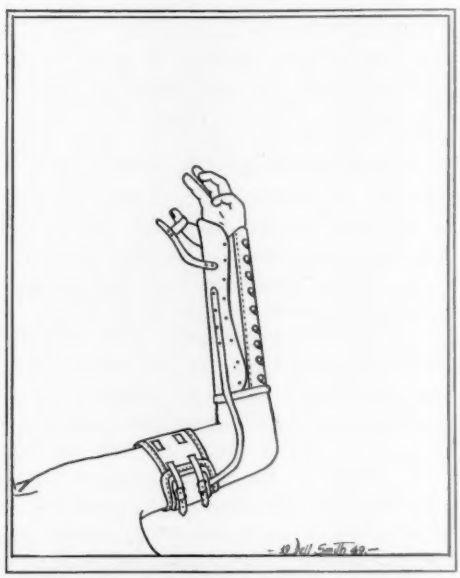

Fig. 6. Funsten type splint, modified, to maintain supination of the forearm and abduction of the thumb.

bow flexion and internal rotation of the shoulder does not prevent useful motion.

The brace man is a technician and should follow the detailed prescription of the orthopedic surgeon as the pharmacist follows the details of the internist's prescription for compounding a medicine. The following example shows the brace prescription for a child with spastic paraplegia with innervational overloads of the gastrocnemius, peroneals, hamstrings and hip adductors:

Name: Jane Jones. Date: 3-10-50. Age: 6.
Address: City. Diagnosis: spastic paraplegia.
Long leg brace (aluminum) with pelvic band.
Round bar caliper (adjustable for length.)
Drop foot ankles, 90 deg., with valgus straps.
Floot plates (steel) from stirrup to metatarso-phalangeal joints under sole.
Surgical shoes; remove heel counters.
Drop ring knee joints with knee caps.
Ball bearing hips, 180 deg. stop with ring locks.
Rigid pelvic band.

For the child with a simple spastic equinovarus, the prescription would read as follows:

Name: Irma Smith. Date: 3-10-50. Age: 6.
Address: City. Diagnosis: spastic hemiplegia, right.
Short leg, medial round bar, drop foot brace (90 deg.) with valgus strap.
Metal foot plate in sole from stirrup to metatarso-phalangeal joints.
Surgical shoe.

As terminology differs, have an understanding with your brace maker regarding this matter.

Surgery of Spastic Paralyysis

Spastic paralysis is a complex problem and operative interference is only an episode in the treatment. Success depends on the re-education possibilities. However, it is the one type of cerebral palsy amenable to orthopedic procedures. The rigidity, athetoid, ataxic and tremor types rarely need orthopedic surgery. Surgery in the treatment of spastic paralysis still has a place and will have for some time to come until efficient cerebral palsy programs are more widely established and conservative treatment can be given early, intensively, and efficiently. Until then, we will continue to see the spastic patient with severe contractures and secondary deformities. If conservative or surgical measures will enable a child to care for himself and relieve a member of the family or institution from that task, the procedure is justified regardless of the estimated intelligence of the patient, provided the rehabilitation is economically feasible.

The Spastic Ankle: Before attempting surgery on the spastic foot and ankle, be certain to review the following possibilities: 1. Spastic calf with normal dorsiflexors—Treat conservatively with braces, if possible. Conservative neurectomies of the spastic gastrocnemius or soleus (never both) is the indicated surgical procedure. 2. Spastic calf and spastic dorsiflexors—This combination should be treated conservatively. Surgery is contraindicated. 3. The spastic calf and flaccid dorsiflexors—This combination should be treated with a partial neurectomy, gastrocnemius and soleus, with a triple arthrodesis combined with posterior bone block or Lambrinudi operation. 4 A normal calf and flaccid dorsiflexors—This combination should be treated with a triple arthrodesis and posterior bone block with a transplant of the peroneals to the mid tarsus, or a posterior bone block if the peroneals are also flaccid. 5. Flaccid calf group and flaccid dorsiflexors—This combination should be treated by triple arthrodesis and posterior bone block, or Lambrinudi operation.

Dorsiflex the foot with knee at 180 degrees, then with knee at 90 degrees. Test for ankle clonus in both positions. If the clonus appears with the knee flexed, the soleus is spastic. If the clonus appears with the knee at 180 degrees, the gastrocnemius is spastic. If clonus is elicted in both positions, both muscles are spastic. If the ankle can be dorsiflexed passively 20 degrees with the knee at 90 and at 180 there is no contracture of the soleus and gastrocnemius.

Determine the approximate severity of the innervational overload by estimating the resistance and the time of relaxation of the calf on passive dorsiflexion. The testing is not complete without determining the status of the extensors, invertors, and evertors of the ankles. Test for stretch

reflexes and contracture in these groups. Does the foot assume an inverted or everted position on weight bearing and when the foot is lifted from the floor? This test will help determine whether there is an imbalance other than that due to calf spasticity.

Treat the spastic calf conservatively as follows: First, relieve any contracture by long leg wedging casts until you obtain 20 degrees dorsiflexion of the ankle. Use the posterior half of a long leg plaster cast for a night splint with the knees at 180, the ankle in at least 10 degrees of dorsiflexion and foot in the neutral position. When the child is walking or standing, use a Perlstein type (Fig. 4(b)) single bar short leg brace with metal sole plate extending to the metatarso-phalangeal joints. If the foot is in varus, use a medial bar with a varus strap and, on valgus, a lateral bar with a valgus strap to maintain lateral balance. The spastic calf should be kept stretched out twenty-four hours of the day except when patient is bathing or changing from splint to the brace. Braces and splints should be kept in good repair and the patient should be seen frequently to insure proper adjustment. The common practice of stretching the calf muscle fifty or one hundred times once or twice a day and applying a brace in the daytime gives indifferent results. The foot must be kept in a position of dorsiflexion at all times if the best results are to be obtained. The Perlstein type brace is so constructed that it may be adjusted to increasing degrees of ankle dorsiflexion with a screwdriver. Active exercise of the ankle extensors in the form of "extensor setting" is indicated if a physical therapist or cooperative parent is available. The exercise should be carried out with the splint or brace on. Avoid the crawling and sitting positions. The child should spend most of the time standing (in a standing table if necessary) or walking or recumbent. The sitting position encourages the flexion contracture of the hips and knees.

There are several reasons for failure of the conservative method of treatment which necessitate a surgical approach. The neglected patient with severe innervational overload plus contracture of the calf often will not respond satisfactorily to conservative treatment. Patients living long distances from their surgeon and bracemaker often do not respond satisfactorily. Indifferent cooperation of parent and patient with the conservative treatment also makes surgery a necessity to the spastic patient. Removal of one inch section from the motor nerves entering the gastrocnemius relieves innervational overload of the gastrocnemius.

If the clonus exists in the soleus, section of one branch to this muscle is indicated. Lengthening of the tendo achilles plus neurectomy of the gastrocnemius is ordinarily not indicated but if the contracture does not respond to wedging casts, I have seen no bad results from the combined procedure, provided the extensors of the ankle are not spastic. In this event, this procedure could cause spastic calcaneus which is worse than a spastic equinus. Lateral imbalance of the ankle due to a spastic posterior tibial and/or peroneus longus and brevis is best treated by waiting until the patient is twelve years of age and doing a triple arthrodesis with transplant of peroneals to the midtarsus and the posterior tibial to the tendo achilles. Remove the posterior tibial tendon if the muscle is spastic and there is already good balance between the calf and extensor groups. The spastic peroneus longus and brevis may be safely transplanted to the midtarsus to oppose a spastic calf. Do not try to restore lateral balance to the ankle with selective neurectomies of the posterior tibial and peroneal muscles; and, do not try to correct innervational overload by tendon lengthenings. A common practice is to do a "Z" plastic lengthening of the tendo achilles for a spastic equinus with no contracture of the calf. Recurrence of the equinus deformity is the rule following this procedure. It also demonstrates a faulty conception of spastic equinus. Following surgery, the long leg posterior splint and Perlstein type brace are indicated for at least six months to a year, perhaps longer. Dynamic balance is difficult to ob-

tain. In any event, do not neglect resistive exercises of the non-spastic extensors muscles in treatment of the spastic calf. The spastic patient having a calcaneo valgus deformity with marked pronation of the forefoot requires a triple arthrodesis with transplant of the peroneus longus and brevis into the tendo achilles. Apply a short leg cast six weeks, a walking boot six weeks and, until growth ceases or dynamic balance of the ankle and foot is obtained, a limited motion ankle short leg brace with a valgus strap.

The Spastic Knee: The test for innervational overload of the quadriceps and hamstrings is made by alternately flexing and extending the leg. This will rule out voluntary resistance which is often mistaken for a stretch reflex. Distract your patient and keep "pumping" the leg.' The stretch reflex will respond consistently. The most common combination is a spasticity of the hamstrings, with or without contracture, and a quadriceps with passive insufficiency and a highly placed patella. In the young child, especially with no contracture of the posterior capsule of the knee or hamstrings existing, a long leg brace with a lock type knee and a long leg posterior mold holding the knee at 180 degrees is indicated. Twenty-four hour splinting and bracing is needed for best results. A fifteen or twenty minute stretching period daily does not bring satisfactory results. While the patient is in the cast and/or braces, quadriceps setting exercises are done as often and as long as tolerated to build up quadriceps tone. When the patient can voluntarily extend the knee to 180 degrees in the standing position, the lock is released from the knee joint and period of walking without knee support may be started.

Surgery for spastic hamstrings and insufficiency of the quadriceps is still a problem. Transfer of the biceps and semitendinosus to the patella has advantages. If contracture exists, a capsuloplasty and "Z" plasties of the remaining hamstrings are indicated. Selective neurectomy of the hamstrings reduces the total muscle power permanently and does not help quadriceps power as does the hamstring transplant to the patella. Advancement of the patella to correct insufficiency of the quadriceps is not essential. If the quadriceps is not stretched and the knee kept at 180 degrees, the quadriceps will gradually shorten and become more efficient, especially if "quadriceps setting" exercises are faithfully done. Three weeks after transplant of the hamstrings to the patella, quadriceps setting exercises are instituted, following in three weeks with active motion from 90 to 180 degrees against gravity, then active resistive exercises with weights applied to the foot. A long leg brace and long leg splint are worn until dynamic balance between the extensors and flexors is restored. A spastic quadriceps opposing normal hamstrings is uncommon. Generally, no surgery is indicated. When both hamstrings and quadriceps are spastic, surgery is not indicated unless the hamstrings produce persistent flexion of the knee, in which case, hamstring transplant to the patella is indicated. Another advantage of the hamstring transplant is, that if too much extensor power is present after the transfer, one of the hamstring tendons may be sacrificed. Neurectomy of motor nerves to the hamstrings permanently sacrifices muscle power.

The Spastic Hip: The most common condition is spastic adductors, internal rotators and flexors. One must carefully differentiate between spastic adductors and internal rotators. On passively adducting the extended lower extremities, stretch reflex of spastic internal rotators will produce internal rotation. Passive external rotation of the lower extremity at the hip will elicit a stretch reflex in spastic internal rotators. Spastic and contracted adductors with inability to voluntarily abduct the lower extremity at the hip is common. Here, it is difficult to determine the status of the hip abductors. Are they spastic, cerebral zero, or in a state of passive insufficiency and disuse atrophy from being overstretched for a long period time? If it is possible to abduct the limbs, a stretch reflex may be obtained, but this is exceptional. By placing the hand over the

hip abductor and asking the patient to spread the legs, it may be possible to feel a voluntary contraction, thus ruling out a zero abductor. One should not attempt a complete adductor tenotomy or neurectomy of both branches of the obturator nerve, if the hip abductors are zero. These patients are able to walk by placing the knees together which is a pathologic gait, but it is better than no gait at all or crutch bearing, which might result if the hips were weakened by a complete adductor tenotomy or neurectomy. In the presence of an active hip abductor, one or both branches of the obturator nerve may be divided. If the hip abductor is spastic, it is better to do a conservative tenotomy of the adductor longus if scissoring is interfering with gait, rather than a neurectomy. The extra pelvic neurectomy is preferable, as the surgeon may resect one branch and do a tenotomy at the same time if contracture of one or more adductors exists. Spastic hip flexors should not be attacked surgically until the hip adductors and hamstrings have been attended to. Hip flexors are stripped from their origins and reattached at a lower position, thus reducing their mechanical advantage. This is better than attempting neurectomy. Frequently, after the hip adductors and hamstrings have been attended to and the patient is able to stand, the hip flexors gradually lengthen and allow the patient to stand upright. Before any surgery is done to balance the spastic hip, knee, ankle or foot, a complete muscle examination must be done, evaluating the degree of spasticity, contracture, cerebral zero muscles, normal muscles and overstretched muscles. Fusion of the hip for spastic paralysis is seldom necessary but may be done if satisfactory dynamic balance cannot be obtained, or in the spastic dislocated hip. If the child must sit a good deal, the Schanz osteotomy would be preferable to the hip fusion.

All spastic children, especially the paraplegias and quadriplegias should have anterior and posterior and lateral x-ray films made of the pelvis and hip joints. Dynamic imbalance of the hip with spastic adductors may produce subluxations and dislocation of the hips. Early conservative or surgical treatment to prevent weight bearing in extreme adduction of the lower limb may prevent dislocation and deformity of the acetabulum.

Appliances for the spastic lower extremity with spastic hamstring and calf muscle, with the spastic hip, consists in long braces with a rigid pelvic band to control rotation and abduction of the hips, a ring lock hip joint, drop ring knee joints and slot caliper or round caliper ankle joints (the latter in children under the age of eight years). The spastic foot must be laced securely in the shoe before the brace is applied. At night, long leg splints with a spreader bar are indicated; the knees at 180 degrees and the ankle in slight dorsiflexion. A spreader is to be placed in the patient's chair to prevent adduction. Braces and splints must be kept on for a twenty-four hour period to get best results, after the patient's tolerance has been built up.

The Spastic Upper Extremity: Whereas the spastic lower extremity can be improved a good deal by conservative and surgical means, the results, using similar methods for the upper extremity, are indifferent and leave much to be desired. There are several reasons for this: In the first place, the motions of the upper extremity are much more complex. In the second place, the control of the spastic upper extremity is frequently poor, even after the disturbed mechanics are corrected. Here again, conservative procedures have preference. Start treatment early and splint the arm against the spastic position, which is usually internal rotation at the shoulder, flexion of the elbow, pronation of the forearm, flexion and ulnar deviation of the wrist and a palmar position of the thumb and flexion of the fingers. Prevent contractures. A long arm night splint with the elbow at 180 degrees, the forearm in complete supination, the wrist in hyperextension, the thenar abducted and the fingers extended is indicated. The day brace is less satisfactory as it is necessary to allow flexion of the elbow and some internal

rotation of the shoulder as well as freedom of the thumb and fingers to give the patient active use of the hand. The Funsten type brace is probably the best (Fig. 6). Active exercises of the antagonistic muscles of the arm are carried on with assistive passive exercises at first to gain the full range of motion of each joint involved. Proved or justifiably expected failure of the conservative treatment is the only indication for surgery. A detailed muscle examination is essential to good treatment.

The Spastic Wrist: The principal procedure of value is tendon transplantation of the flexor carpi radialis to the thumb and index finger and transplant of the flexor carpi ulnaris to the finger extensors. Contraction of the finger flexors should be corrected by lengthening these tendons instead of resorting to the Stoeffel procedure. However, lengthening of the finger flexors without transplant of the wrist flexors to the finger extensors is not a good procedure. Finger flexors are best lengthened by doing a long "Z" plasty at the junction of the tendon to the muscle belly. Two small interrupted sutures at each end of the "Z" plasty to hold the tendon in position are all the repair necessary. In patients who have the ability to actively extend the fingers, a wrist fusion may be elected instead of the tendon transplant of the wrist flexors to the thumb and finger extensors. A cock-up wrist splint should be tried several months to determine if the fused wrist actually will improve the hand function. Wrist fusion should not be done before the age of ten or twelve years. Radiocarpel arthrodesis should be done in 20 degrees of hyperextension. The best procedure to correct the underslung thumb is the carpometacarpel arthrodesis with the thumb in a postion of opposition. Tendon transplantations are less effective.

The Spastic Forearm: Section of the pronator teres will be helpful if passive motion of the radio-ulnar joints is free. This is a prerequisite of all tendon transplantations in the spastic forearm. Unless the tendon on the pronator teres is resected or buried in the brachioradialis, it will often reattach to the radius. Stripping of the pronator quadratus and section of the interosseous membrane is done in more severe contractures. If the flexor carpi ulnaris has not already been used for transfer to the finger extensors, it may be mobilized and transplanted to the distal end of the radius as described by Steindler, page 131, Orthopedic Operations. This operation will not be satisfactory unless there is a full passive range of motion of the radio-ulnar joints.

The Spastic Elbow: Flexion spasticity is the rule. Test the biceps and brachialis separately as follows: Hold the arm in abduction and external rotation with the forearm pronated. Observe the amount of possive extension obtained. Now, flex the arm and supinate the forearm, which relaxes the biceps. Observe again the amount of passive extension possible. The difference indicates the amount of biceps contracture. The remainder is contracture of the brachialis, and to some extent the elbow capsule and the brachioradialis and wrist flexors. If the patient can easily extend the elbow, no surgery is indicated. If the biceps is contracted, a transplant of the biceps to the brachialis to reduce its mechanical advantages is indicated. If both biceps and brachialis are contracted, section both and rely on the brachioradialis and wrist flexors to flex the elbow. A postoperative cast with the elbow at 180 degrees for three weeks is necessary.

The Spastic Shoulder: Internal rotation and adduction is the rule in the spastic shoulder. Test for spastic or zero antagonists first. If the shoulder relaxes at rest, no surgery is necessary. For severe contracture of the internal rotators, the rotation osteotomy of the humerus through the surgical neck or the Sever operation gives good results. For adduction contracture, "Z" plastics of the pectoralis major and latissimus dorsi are indicated. Active resistive exercises of the antagonists should be started with splinting in abduction until active abduction is possible.

Summary

1. A brief neurologic review of spastic paralysis is presented.

2. Muscle testing for spastic is different.

3. No training or surgery should be attempted without a detailed muscle test. Physical therapy prescriptions should be written in detail by the orthopedic surgeon. Modalities of physical therapy are presented.

4. Braces for spastics are different. Brace prescriptions should be written in detail by the orthopedic surgeon. Brace construction and rationale are presented.

5. The surgery of spastic paralysis is reviewed after proper emphasis that the early conservative treatment is the treatment of choice and that surgery is usually reserved for the neglected spastic patient when conservative treatment cannot be carried out. All surgery has its best results after cessation of the growth period.*

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*The discussion of the surgery of spastic paralysis applies only to the spastic type and not to the athetoid, flaccid, rigidity, tremor or ataxic types of cerebral palsy.

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THE IRREDUCIBLE MINIMUM IN MATERNAL MORTALITY*

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At a time when considerable criticism has been voiced on the inadequacy of medical services to the various economic classes in the United States, the examination of an edifying statewide mortality record in Colorado seems appropriate. One of the better indexes to employ in appraising this aspect of medical care has been the maternal mortality trend. One hundred years ago, fifty mothers per 1,000 live births died in childbirth. Today, in Colorado, about one mother in the same number of births succumbs. Speculation has it that this figure is the irreducible minimum in maternal mortality. Whether or not such a rate actually represents the rock bottom, a modicum of pride certainly can be taken from this vanishing mortality.

The eleven-year report of 735 fatalities is based upon all deaths associated with pregnancy in Colorado from 1939 to 1949. This information was obtained from an individual examination of all death certificates in the State Bureau of Vital Statistics for the eleven-year span. Since there is little agreement as to what constitutes an obstetric death, any fatality associated with pregnancy, labor, delivery or the puerperium was considered a maternal death. The mortality rate, using this criterion, was slightly higher than that of the State Bureau of Vital Statistics or the U. S. Census Bureau.

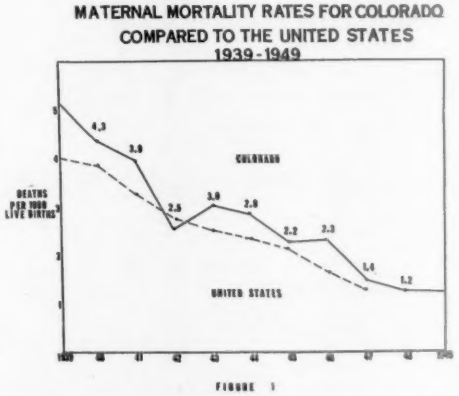

FIGURE 1

*Presented at the Postgraduate Course of Obstetrics and Gynecology, University of Colorado Medical Center, Denver, Colo., April 28, 1950. From the Maternal and Child Health Section, State of Colorado Department of Public Health; Department of Obstetrics and Gynecology, University of Colorado Medical Center, Denver.

A number of references have been omitted because of limited space. The author thanks **Miss Lena Bell** of the State Department of Health for her work in examining all death certificates, the Records and Statistics Section of the same department, and to the hospitals of Colorado for answering the questionnaires on cesarean sections.

TABLE 1
MATERNAL MORTALITY
NUMBER OF DEATHS AND MORTALITY RATE
COLORADO 1939 TO 1949

Year	Number of Deaths			Resident Live Births Colorado	Maternal Deaths Per 1000 Live Births	
	State Bureau of Vital Statistics	Individual Certificate Examination	U. S. Census Bureau		Colorado	U. S.
1939		107	111	20,618	5.1	4.0
1940	88	94	86	21,436	4.3	3.8
1941	63	84	72	21,452	3.9	3.2
1942	33	58	44	23,337	2.5	2.6
1943	49	74	63	24,203	3.0	2.5
1944	45	67	59	23,805	2.8	2.3
1945	49	62	59	23,228	2.2	2.1
1946	55	68	57	29,176	2.3	1.6
1947	40	46	42	32,030	1.4	1.3
1948		37		32,306	1.2	
1949		41		32,190	1.2	

The difficulties involved in classifying deaths as maternal are numerous and well known. Some causes take precedence over pregnancy and hence escape recording. Since no general agreement exists on the length of the puerperium, another group of deaths attributable to pregnancy misses tabulation. Occasionally, those from abortions, moles, and chorionepitheliomas are not included in maternal mortality statistics. Albeit some of these fatalities have been called "bookkeeping deaths," nevertheless this study in the interests of valid reporting excluded no cases where pregnancy was mentioned. Tables 2 and 3 were prepared to show in detail the classification of the 735 deaths associated with pregnancy.

TABLE 2
MATERNAL MORTALITY
IMMEDIATE CAUSE OF DEATH
COLORADO 1939 TO 1949
11 YEAR SUMMARY

PRINCIPAL CAUSE OF DEATH		NO. CASES	PER CENT
SHOCK AND HEMORRHAGE		223	30
Postpartum	94		
Ectopic	36		
Placenta Praevia	35		
Premature Separation	27		
Abortion	20		
Ruptured Uterus	9		
Mole	2		
INFECTION		186	25
Post Abortal	86		
Puerperal	76		
Embolism with Thrombophlebitis	12		
Appendicitis	12		
TOXEMIA		148	20
Eclampsia	87		
Unclassified	23		
Nephritis	17		
Hypertensive Cardiovascular Disease	12		
Pre-eclampsia	7		
Hyperemesis	2		
INDIRECTLY RELATED TO PREGNANCY		136	18
Embolism	53		
Cardiac Failure	35		
Pneumonia	17		
Chorionepithelioma	4		
Anesthesia	3		
Other	24		
NOT RELATED TO PREGNANCY		42	5
Tuberculosis	9		
Cancer	6		
Bacterial Endocarditis	6		
Accidents	3		
Other	18		
TOTAL		735	100%

TABLE 3
MATERNAL MORTALITY
CAUSES OF DEATH
COLORADO 1939 TO 1949

CAUSES OF DEATH	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	TOTAL	PER CENT
Directly Related to Pregnancy	60	49	44	33	38	27	34	36	30	24	23	396	54%
Indirectly Related to Pregnancy	19	34	13	9	13	21	15	16	5	5	6	136	18%
Non-Obstetrical	4	2	6	6	4		2	7	2	2	6	41	5%
Abortions	19	26	16	7	13	14	4	6	5	4	6	120	17%
Ectopics	4	3	2	5	4	4	6	3	4	1		36	5%
Mole and Chorion-epithelioma	1		1		2	1				1		6	1%
TOTAL	107	94	82	58	74	67	61	68	46	37	41	735	100%

The most striking salvage of mothers has occurred in the infection group (Fig. 2, Table 4). This reduction has been attributed in most part to the prophylactic and theraputic use of sulfonamides, antibiotics and blood transfusions. Nevertheless, a share of the credit belongs to the increasing number of hospital deliveries, the trend away from traumatic vaginal deliveries, improved aseptic surgical technics, better obstetrical judgment, anticoagulants and early ambulation. The improved management of the neglected and infected parturient by vaginal delivery wherever possible and by extraperitoneal section or cesarean hysterectomy when indicated, has been responsible also for the decline in infection deaths. Included in deaths from infection were twelve associated with appendicitis. For pure purpose of classification it is understandable how these cases might be discarded as maternal deaths, or be pigeonholed as a "coincidental" cause of maternal mortality.

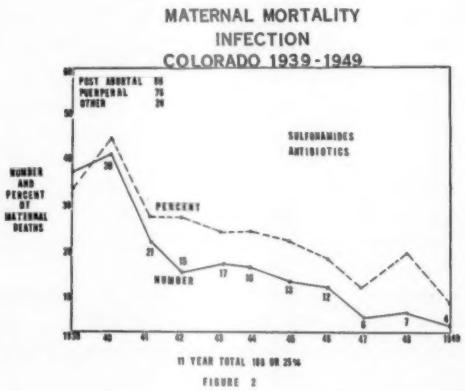

FIGURE 2

However, during pregnancy, the difficulty in diagnosing appendicitis especially in the puerperium and the unhealthy results of emptying a uterus after removing a ruptured appendix seem worthy at least of mention if not inclusion in the statistics.

TABLE 4
MATERNAL MORTALITY
INFECTION
COLORADO 1939 TO 1949

CAUSE OF DEATH	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	TOTAL
Puerperal Sepsis	11	9	3	4	4	4	4	3		2	2	46
Puerperal Peritonitis	6	3	1	2	1	1	2		1	1		18
Puerperal Septicemia		3	1	2	3	2	1					12
Post Abortal Septicemia	11	9	5	3	5	6	1	2	1	2		45
Post Abortal Peritonitis	4	7	5	2	2	2	1	1		1		25
Post Abortal Sepsis		5	3		1	1	1	1	2		2	16
Embolism with Phlebitis		2	2	1			2	3	1	1		12
Appendicitis	4	1	1	1	1		1	2	1			12
TOTAL	36	39	21	15	17	16	13	12	6	7	4	186
Per cent of all maternal deaths	34	42	26	26	23	24	21	18	13	19	10	29%

A striking decrease in the number of deaths from abortion can be seen in Fig. 3. The majority of these cases were signed out to septicemia and peritonitis. Tietze, in a comprehensive survey of abortion as a cause of death, attributes the precipitous decline to a combination of several factors, (1) improved and more widespread use of contraceptives, (2) increased skill of abortionists in avoiding infection, and (3) use of sulfonamides and antibiotics in the treatment of infection. It seems worthy of comment that eight women from 1947 to 1949 died of an infected abortion, while four succumbed following hemorrhage. This suggests the possibility of a reduction in maternal mortality from abortion by the timely use of compatible whole blood in addition to chemotherapy.

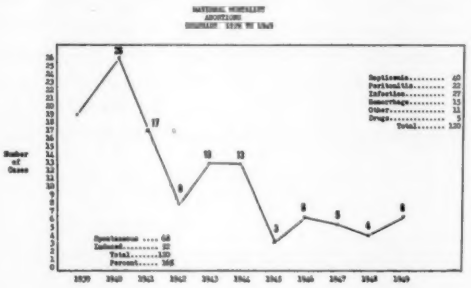

FIGURE 3

Hemorrhage in this state as elsewhere ranks highest as the cause of maternal mortality. These 223 hemorrhage and shock deaths constituted 30 per cent of the total and are outlined in detail in Fig. 4 and Table 5. During the antenatal period, placenta praevia and premature separation of the placenta took the highest toll. In the puerperium the majority of hemorrhage deaths as might be expected were due to uterine atony. It is surprising that hemorrhage should have the leading place in mortality figures. After 100 years of investigative work in blood transfusions and the practical experience of two world wars, the treatment of blood loss by blood replacement should be a simple, well established sanguine procedure. Perhaps when the knowledge and the blood become universally available to all physicians maternal deaths from hemorrhage will become a rarity.

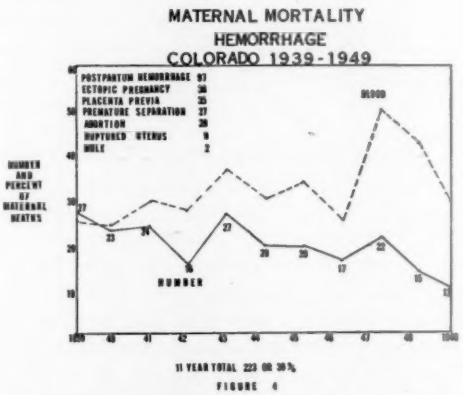

FIGURE 4

Infection and hemorrhage which have distinct etiologies are easy prey to specific therapy. However, the toxemias of pregnancy, unknown of origin, can boast of no such specific remedy. Hence the downward trend in the number of deaths from this symptom complex will not compare in magnitude to the decline in infectious

TABLE 5
MATERNAL MORTALITY
SHOCK AND HEMORRHAGE
COLORADO 1939 TO 1949

CAUSE OF DEATH	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	TOTAL
Postpartum Hemorrhage	10	5	13	6	14	6	7	9	8	7	9	94
Ectopic Pregnancy	4	3	2	5	4	4	6	3	4	1		36
Placenta Praevia	8	4	2	1	4	3	3	2	4	3	1	35
Premature Separation	1	3	4	4	1	4	2	3	3	2		27
Abortion	2	6	3		3	1	1		2		2	20
Ruptured Uterus	1	2			1	2	1		1	1		9
Hole	1									1		2
TOTAL	27	23	24	16	27	20	20	17	22	15	12	223
Per cent of all maternal deaths	25	24	29	28	37	30	33	25	48	41	29	30%

deaths. From Fig. 5 and Table 6, toxemia of pregnancy in 1949 has risen to number one place as a cause of maternal deaths in this state. The primary reduction in the toxemia death rate from this and other studies has occurred in the eclamptic group. Twelve deaths from convulsions took place in 1939 while only five mothers died in 1949, over a 50 per cent decrease.

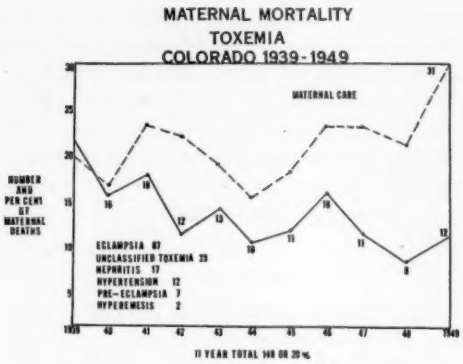

FIGURE 5

Although much has been written on the toxemias of pregnancy, the virtues of complete prenatal care, prompt treatment of the "warning signs," and the avoidance of overtreatment of toxemia are still worthy of considerable emphasis. To substantially reduce maternal mortality in the future, patients with chronic nephritis and essential hypertension will require more thorough medical study and closer evaluation prior to, during and after pregnancy. Medical and obstetrical responsibility for these patients will of necessity extend beyond the immediate childbearing period and include critical counseling on the advisability of becoming pregnant, and considered judgment on such questions as if, when and how pregnancy should be terminated.

TABLE 6
MATERNAL MORTALITY
TOXEMIA OF PREGNANCY
COLORADO 1939 TO 1949

CAUSE OF DEATH	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	TOTAL
Eclampsia	12	10	12	6	8	6	7	10	6	5	5	87
Unclassified Toxemia	2	2	2	2	2	3	2	3			5	23
Nephritis	3	1	3	1	1		1	2	3	1	1	17
Hypertensive Cardiovascular Disease	2	1	1	2	1	1			1	2	1	12
Pre-eclampsia	2	1			1		1	1	1			7
Hyperemesis		1		1								2
TOTAL	21	16	18	12	13	10	11	16	11	8	12	148
Per cent of all maternal deaths	20	17	22	21	18	15	18	24	24	22	31	20%

Because of recent reports in the cesarean section literature and the growing impression that more operations are being done with fewer mothers dying, a questionnaire was sent to all hospitals in the State of Colorado. About forty, or 66 per cent, of these hospitals cooperated by sending in figures on the number of deliveries, cesarean sections and section deaths for each year from 1940 to 1949. Of twenty-one hospitals reporting, there were a total of 95,240 deliveries, 2,818 cesarean sections with thirty-six deaths.

The incidence as calculated from these data was 3.0 per cent while the maternal mortality associated with cesarean section was 1.3 per cent. A report from Indianapolis and the Central States revealed a 1.4 per cent mortailty rate in 5,393 cesarean sections. Of these the classic operation had a 2.8 per cent mortality compared with an 0.8 per cent in the low cervical type. In a five-year period from 1937 to 1941, DeNormandie studied 11,030 cesarean sections in the State of Massachusetts. This number occurred in 333,731 births, giving a section rate of 3.3 per cent and a mortality rate of 2.46 per cent. The incidence of section remained the same throughout his five-year period. The cesarean section rate in Colorado has shown a more gradual rise since 1940 with a reciprocal relationship in mortality rate. This bears out D'Esopo's data that a rising incidence of cesarean sections with a declining death rate has been in progress during the last decade. This increased section rate has been attributed to the substitution of cesarean section for the more trumatic vaginal deliveries while the downward trend in mortality has been

TABLE 7
CESAREAN SECTIONS IN 21 REPRESENTATIVE
COLORADO HOSPITALS OVER A 10-YEAR PERIOD
1940 TO 1949

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	Total
Total Deliveries	4689	5367	7159	8599	8926	9199	11,499	13,474	13,181	13,347	95,240
Number of Cesarean Sections	117	145	188	191	243	254	364	382	454	489	2,818
Number of Deaths Following Cesarean Sections	3	5	2	3	4	5	6	2	4	2	36
Cesarean Section Rate	2.5	2.8	2.6	2.2	2.7	2.8	3.2	2.8	3.4	3.7	3.0
Cesarean Section Mortality Rate	2.6	3.4	1.1	1.6	1.6	2.0	1.6	0.5	0.9	0.4	1.3

due to improved selection of candidates for cesarean section, improved types of operation, liberal use of blood, antibiotics and sulfonamides, better pre- and postoperative care and safer anesthesia. However, too much of a good thing or the possibility of reaching a point of diminished returns becomes eminent if the trend in cesarean section rate continues and passes the so-called ideal 5 per cent rate.

MATERNAL MORTALITY
CESAREAN SECTION
COLORADO 1940 - 1949

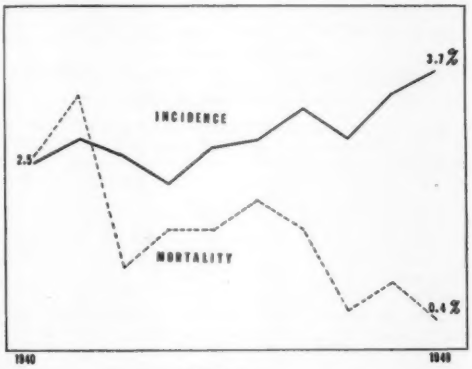

FIGURE 6

Thrombo-embolic deaths in the group of 735 fatalities amounted to 96 or 11.5 per cent. This incidence is slightly higher than has been reported elsewhere. Only 18 per cent of the tabulated embolic deaths in this summary were confirmed at postmortem.

TABLE 8
MATERNAL MORTALITY
CESAREAN SECTION
COLORADO 1939 - 1949

INDICATION	NUMBER	IMMEDIATE CAUSE OF DEATH	NUMBER
Not Listed	27	Hemorrhage	17
Toxemia	13	Embolism	17
Eclampsia	9	Infection	17
Placenta Praevia	8	Uremia	8
Contracted Pelvis	7	Eclampsia	7
Premature Separation	5	Cardiac Failure	7
Bandl's Ring	3	Obstruction	7
Diabetes Mellitus	3	Not Listed	6
Ruptured Uterus	2	Other	3
Ruptured Appendix	2		
Other	10		

Total Cesarean deaths..... 89
Per cent of all maternal deaths..... 12%

TABLE 9
MATERNAL MORTALITY
THROMB-EMBOLIC DEATHS
COLORADO 1939 TO 1949

Type	Embolus	Thrombus	Total Number and Approximate %
Pulmonary	59	3	62
Cerebral	8	3	11
Cardiac	18	5	23
Total	85	11	96
Per cent Autopsies	15%	50%	18%

For Comparison of Embolic Deaths

Report	Births	Maternal Deaths	Embolic Deaths	Percent Embolic Deaths
Cleveland 1930-34	80,136	469	37	7.8%
Colorado 1939-49	283,761	735	96	11.5%

Discussion

Perusal of the mortality figures for the past eleven years permits a feeling of pride at the remarkable reduction of deaths and lends factual evidence to the continued improvement of medical services. However, it likewise suggests that the speculative irreducible minimum has not been reached and it points the way to the attainment of this millennium provided the suggestions from this and other surveys are well taken.

MATERNAL MORTALITY
STATE OF COLORADO
BY COUNTY OF RESIDENCE
10 YEAR PERIOD 1940 - 1949
(Counties Having Less than 1000 Live Births Not Included)

County	10 Year Total Resident Live Births	10 Year Total Maternal Deaths	Maternal Deaths Per 1000 Live Births For the 10 Year Period
Garfield	2222	2	.90
Kit Carson	1595	0	0
Phillips	1033	1	.96
Washington	1479	1	.67
Adams	6098	8	1.31
Alamosa	2711	5	1.70
Arapahoe	9944	17	1.70
Denver	81424	130	1.59
Gunnison	1143	2	1.75
Larimer	7816	9	1.15
Morgan	4000	7	1.75
Routt	2091	3	1.43
Sedgwick	1180	2	1.69
Weld	14864	23	1.54
Baca	1718	4	2.32
Boulder	8339	17	2.03
Crowley	1372	3	2.18
Eagle	1090	3	2.75
El Paso	12286	26	2.11
Jefferson	8262	20	2.42
Lake	1675	4	2.38
Lincoln	1318	3	2.40
Mesa	7534	18	2.38
Montezuma	2403	5	2.08
Prowers	3675	11	2.99
Yuma	2182	5	2.29
Chaffee	1358	5	3.68
Costilla	1285	5	3.40
Logan	3939	13	3.30
Otero	6573	20	3.04
Pueblo	14648	46	3.13
Delta	3450	14	4.05
La Plata	3418	14	4.09
Las Animas	6991	30	4.29
Montrose	3248	14	4.31
Rio Grande	3444	14	4.43
Bent	1913	10	5.22
Fremont	3535	17	5.42
Moffat	1128	6	5.31
Conejos	2154	14	6.50
Huerfano	2604	18	6.91
Saguache	1411	9	6.37

Maternal deaths from infection will be a rare occurrence indeed if strict aseptic technics are followed in home and hospital, if adequate amounts of antibiotics, sulfonamides, and blood are used prophylactically as well as therapeutically and if appendicitis during pregnancy is diagnosed early, treated by surgery and the products of conception left undisturbed at the time of operation.

Hemorrhage and shock deaths will be greatly reduced when adequate amounts of whole compatible blood, promptly given, supersede such ostrich procedures in the treatment of exsanguination as ice caps, massage, abdominal binders, shock position, ampules of oxytocics, douches, intravenous fluids and vaginal packs.

The Belle Bonfils Foundation at the Colorado Medical Center has created seven walking and two branch blood banks over this state. By virtue of plane, rail, and bus transportation they will dispatch blood to any area requesting it. If good obstetrical judgment in the handling of parturients is combined with the ability and facilities for the quick administration of adequate whole compatible blood, maternal deaths from hemorrhage will probably disappear.

Common knowledge as well as figures from this study demonstrate again that all but an occasional eclamptic can be saved. Pre-eclampsia though non-preventable, can be controlled by careful prenatal care thus salvaging another group of mothers. These measures together with more astute evaluation and subsequent handling of the patient with chronic vascular renal disease would relegate toxemia to the minor position it so richly deserves on the roster of maternal deaths.

The State of Colorado could profitably reduce the present 1.2 rate of 1948 and 1949 to a new minimum by adopting three revisions in the "status quo."

1. The institution of a postgraduate, bedside-delivery room teaching course conducted at the University of Colorado Medical Center for physicians of this state.

2. The widespread use of well trained obstetricians as consultants on difficult or operative obstetrical problems also could be employed effectively and painlessly in reducing maternal mortality.

3. A Joint Committee on Maternal Welfare could be instituted under the impetus of the Maternal and Child Health Committee of the Colorado State Medical Society to study and report in detail all maternal deaths in the State of Colorado. By integration with the State Department of Public Health and the Denver Obstetrical and Gynecological Society, a monthly meeting and discussion before medical students, interns, residents and practicing physicians would prove, as it has elsewhere, an excellent teaching exercise and a powerful adjunct in reducing maternal mortality.

DIABETICS CAN LEAD LONG, ACTIVE AND NORMAL LIVES

The control of diabetes so that a person suffering from the disease may lead a long, normal and active life has become a reality, according to the current (September 15) Journal of the American Medical Association. In a study of 760 diabetic patients suffering from the disease twenty-five years or more, Dr. Elliott P. Joslin of Boston, found approximately 80 per cent active and a few in perfect health.

"The patients in perfect condition are those whose treatment was initiated (with hardly an exception) with strenuous control of diabetes in their early years," Dr. Joslin stated, "this control being maintained for ten years, more or less, to more than the usual extent and even then continued. In this series the evidence is overwhelming that strict treatment of diabetes pays and, moreover, that control of the disease is possible." Of the total group studied, twenty-three patients had had diabetes for more than twenty-five years and yet had a sound body with urine free from albumin, eyes without diabetic complications such as hemorrhages and cataracts, and had arteries free from calcification. Of these twenty-three patients, all of whom live in unusually favorable homes and under comfortable social circumstances, according to the survey, thirteen inherited the disease, the age of onset ranging from 1 4/5 to 32 years. All take insulin. Seventeen married, resulting in twenty-eight living children, all of whom are healthy.

Another sub-group consisted of 181 patients, eighty-one of whom were men, who have had diabetes from twenty-five to thirty years. One hundred and twenty-six are married, resulting in 111 offspring. Of this group, several suffered from psychological and psychiatric difficulties and such complications as tuberculosis, the report added. The largest group studied consisted of 516 persons with diabetes of twenty-five years' duration, with the onset of the disease between 15 and 40 years of age. Of this group, 273 are men. The average incidence of hereditary diabetes was 44 per cent—32 per cent among the men and 53 per cent among the women. Four hundred and ten of these patients married.

Case Reports

ECHINOCOCCUS DISEASE*

REPORT OF FOUR CASES CONTRACTED IN THE UNITED STATES

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SALT LAKE CITY

While echinococcus cyst or hydatid disease is mentioned commonly in differential diagnoses in clinical-pathological conferences, the reported cases in this country are relatively few and cases in which the disease has been contracted in the United States are extremely rare.

Magath, in 1937, listed approximately 500 reported cases of the disease since 1811 in all of North America. Of these, only twenty-nine had been contracted in North America. From 1937 to 1948, approximately forty-eight additional cases have been reported in the United States. Only eleven of these people have been born and presumably infected in the United States. Our cases bring the total contracted in the United States to forty-five. Because of this, we feel that our six cases, covering a period of three years in one hospital, and of which four were contracted in the United States, are worthy of presentation. Two of our cases occurred in foreign-born men and their disease was apparently acquired in their homeland. One, a 57-year-old Basque sheepherder, had a cyst of the liver, an incidental finding at autopsy. The other, a 56-year-old Greek, also had a cyst of the liver. This was symptomless except for pressure effects.

The four cases of local infestation are the ones which we wish to report in detail:

CASE 1

M. J. N., a 4-year-old white child, was admitted to the hospital on September 10, 1947. The admitting complaints were weight-loss and enlargement of the liver. The child had presented increasing irritability and weight-loss for six months prior to admission, and abdominal enlargement had been noted for approximately three weeks. On admission, the liver margin extended six cms. below the costal margin. Physical examination was otherwise negative except for evidence of weight-loss. No eosinophils were seen in the peripheral blood and there was no preoperative fever. The preoperative diagnosis was "liver cyst, etiology unknown." At operation, a large cyst was found in the liver substance; this contained fluid and gelatinous membrane which could only be partially removed. Study of the fluid revealed numerous hooklets; the membrane was chitinous in nature (Fig. 1). The remaining cyst wall was treated with formalin. The child made an uneventful recovery and her present health and development is good.

This child was born and has always lived in Salt Lake City, Utah. Her only contact with dogs or sheep came on visits to her grandfather's farm which is located in Salt Lake County. A few sheep and several dogs are kept on this farm.

CASE 2

R. C., a 19-year-old white male auto mechanic, was admitted to the hospital on June 27, 1946, for treatment of a cyst of left lower lobe of the lung.

Past history revealed no previous illnesses, but for several years he had noted an occasional sharp pain in his left lower anterior chest. He had been rejected for service in the Armed Forces because of a "shadow" in the lower left lung field. On March 6, 1946, he developed a cough and expectorated a considerable amount of thin, white fluid. He felt well for the next two days, but then had pain in the left anterior chest for a few hours. A week later, he had a similar chest pain, accompanied by productive cough and high fever, necessitating bed rest for two weeks. He felt well from that time until admission to the hospital. There was no temperature elevation or cough. A chest x-ray taken in November, 1944, showed a rounded discrete opacity in the left lower lung field, just above the diaphragm and adjacent to the ribs. The same opacity, although smaller and less discrete, was present in films taken May 20, 1946.

Physical examination was negative except for the chest. The percussion note was slightly impaired in the posterior and mid-axiliary region in the left base, but no râles were present.

On July 2, 1946, a lobectomy was performed, with a preoperative diagnosis of "cyst, left lower lobe." The surgical specimen consisted of the lower lobe of the lung which measured 13x8.5x5 cms.; the basal part was atelectatic and hemorrhagic. The lobe contained a solitary, soft, oval mass which measured 4.5 cm. in diameter; on section, the mass was cystic and contained folds of white gelatinous material. Between the folds was a brownish semi-fluid substance. The entire mass was well encapsulated.

Microscopic sections presented pulmonary tissue which exhibited considerable fibrosis, atelectasis, hemorrhage and exudation of lymphocytes. The margins of the cyst consisted of hyalinized fibrous tissue and the characteristic membrane of hydatid disease. No definite parasites were recognized in the fixed sections, but smears made from the fluid presented the diagnostic hooklets.

The patient's postoperative course was uneventful and he was discharged July 14, 1946, in excellent condition.

From later correspondence, it was learned that this patient had been born and raised in Utah and had never lived or visited elsewhere. His present health is very good.

*From the Pathological Laboratory, Dr. W. H. Groves Latter-Day Saints Hospital and Department of Pathology, University of Utah School of Medicine.

CASE 3

Mr. L. M., a 48-year-old male, auto mechanic, was admitted to the hospital on April 2, 1949. His past history disclosed the usual childhood diseases and an attack of "pneumonia" in November, 1948. No fever, chills or pleuritic pain was noted at this time and the illness responded poorly to antibiotic therapy. Symptoms of productive cough, dyspnea, and hoarseness persisted with only slight improvement. An x-ray done subsequently revealed the presence of a cystic mass, 4x5 cm. in diameter, lying anteriorly at the periphery of the right lung.

Physical examination was negative; a 1 per cent eosinophilia was present. On April 3, 1949, a bronchoscopy was performed which showed no abnormalities, but a radiogram of the chest showed two abnormal findings — one was a round, discrete opacity, 2 cm. in diameter, located anterior to the hilum of the right lung; the other abnormality was a cystic cavity located in the central portion of the right lung, anterior to the mid-oronal plane.

On April 6, 1949, a lobectomy was performed with removal of the right upper lobe and a cyst from the right lower lobe. The preoperative diagnosis was "pulmonary cyst, possible echinococcus disease." The patient's recovery from these procedures was satisfactory.

A Casoni skin test on April 10, 1949, was strongly positive.

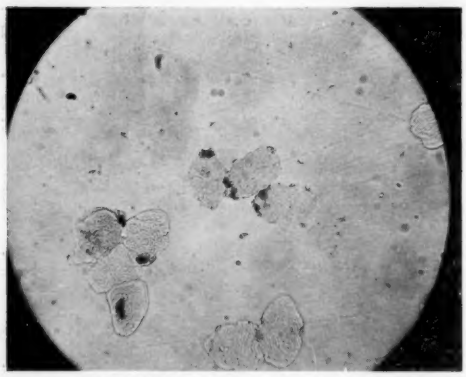

Fig. 1. Wet mount of fluid from cyst containing hooklets and scolices (X170).

On April 17, although the chest showed fairly good aeration in the remaining lobes on radiologic study, there was some haziness throughout, thought to be due to fluid. Because of these findings, and a slight temperature elevation with a white-cell count of 11,300 per cu. mm., thoracentesis was carried out. No fluid was found in the chest cavity and the needle was introduced farther into the chest. It apparently passed through the diaphragm, and clear fluid containing white specks was obtained, presumably from a liver cyst. Laboratory examination revealed the presence of hooklets and scolices, and 500 c.c. of fluid was removed to lessen the danger of anaphylatic shock from leakage through the puncture site. The drainage needle was strapped in place to further lessen leakage and the patient was immediately taken to the operating room where a cyst in the dome of the right lobe of the liver was drained and its membrane, measuring 8x9.5 cms., was removed; a smaller cyst measuring 6x4x3 cms. was resected intact. The wound was packed with formalin-soaked gauze and closed.

The pathological study of the lung tissue showed a cystic mass measuring 2x1.5 cms. in diameter at the periphery of the lung segment. This had a laminated greyish-white wall with multiple small fine nodules, measuring up to 1 mm. in diameter, on its inner surface. The accompanying pulmonary tissue presented a second laminated cyst, 2 cm. in diameter. Smears were made from the contained fluid within the cysts; the preparations contained numerous hooklets and well defined scolices.

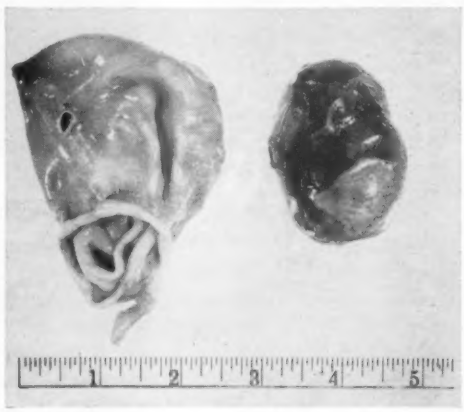

Fig. 2. Gelatinous appearing cyst membrane from larger liver cyst and smaller intact liver cyst.

Sections of the membrane of the cysts presented the characteristic, laminated chitinous membrane seen in echinococcus cysts. Attached to this membrane were fragments of granular material, and hooklets were found embedded in this material. Peripheral to this zone was a band of granulation tissue exhibiting fibroblastic hyperplasia and numerous lymphocytes. An occasional foreign body giant cell was seen in this area. The lung about the cyst and inflammatory zone was atelectatic, with vascular congestion and large collections of lymphocytes. The alveolar walls exhibited fibrosis. The histological studies of the liver cysts showed a similar formation and tissue reaction.

This patient was born in Illinois, where he resided until 6 years of age. He lived in Kansas for the next three years, and since that time has resided in Idaho. His vacations have been spent in the states surrounding Idaho. He owned a pet dog for fifteen years but disposed of it three years before admission. He had no contact with other pets or sheep.

CASE 4

G. P., a 12-year-old white male school child, was admitted to the hospital on October 4, 1948, with a diagnosis of tumor involving the left lung. Past history revealed that he had an attack of "pneumonia" at 9 months of age of undetermined duration, and another severe attack at 5 years of age. Fluoroscopic examination after the second attack was said to show a "spot on the lung." Two weeks before admission, he developed a fever of 104°. An x-ray study, prior to admission, was reported: "Lung fields show no changes

except a fairly well circumscribed opacity in the left mid-lung field, separated from the left heart border by a distance of 0.5 cms. and extending from the level of the seventh to the ninth ribs posteriorly. It is fairly circular in shape and of moderate fairly homogenous density, although there is some variation in density evident. No fluid level noted."

The history otherwise revealed only the usual childhood diseases. Physical examination was negative except for a soft systolic murmur over the cardiac apex. Laboratory findings were not abnormal; only a 1 per cent eosinophilia was present.

On October 6, 1948, a lower left lobectomy was performed, with a preoperative diagnosis of "either a posterior mediastinal tumor or intrapulmonary cyst." The specimen consisted of a left lower pulmonary lobe containing a rounded cystic mass, 5.5 cm. in diameter, filled with a thick, yellowish green tenacious fluid. Microscopic studies revealed lung tissue which was atelectatic, with thickening and lymphocytic infiltration of the alveolar walls. This picture gradually merged into a zone of fibrosis, lymphocytic exudation, and vascular congestion. Centrally to this was a layer of denser fibrous tissue and lying beneath this were irregularly shaped bands of strand-like amorphous material resembling chitin. Foreign body giant cells were clustered about the periphery of these strands and there was a marked diffuse inflammatory reaction characterized by the presence of both lymphocytes and neutrophils. As the center of this mass was approached, fibrosis and hyalinization increased, and scattered areas of calcification were present. This picture was reduplicated in the multiple sections studied (Fig. 3). No hooklets or scolices were found in either the paraffin sections or smears from the original tumor mass after fixation. Despite the absence of hooklets, because of the characteristic chitinous strands, it was felt that a definite histologic diagnosis of echinococcus cyst of the lung with secondary infection could be made.

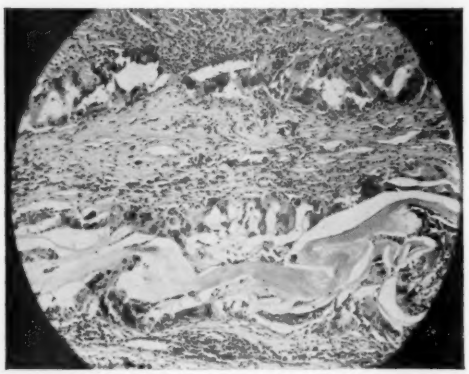

Fig. 3. Marked granulomatous and giant cell reaction about chitinous strands (X170).

A Casoni skin test performed October 10, 1948, was positive. The patient's postoperative recovery was uneventful and he was discharged October 14, 1948. His present state of health is good.

Subsequent inquiry disclosed that he was born and raised in Utah and had only been out of this state for short vacations to Arizona and New Mexico. He lived on a farm where his parents kept a few sheep. He owned a pet fox and cat, as well as a dog that was his constant companion.

Discussion

Echinococcus cyst is the larval or hydatid stage of the tapeworm, Echinococcus granulosus. The mature worm consists of from three to five segments and is 3 to 6 mm. in length. Its main definitive host is the dog, but the wolf, jackal, fox and cat have been found infected. Besides man, the secondary host is infected by the ingestion of the ovum or gravid proglottid, either directly, or through food or drink contaminated by the feces of an infected animal. Infection in man usually occurs during the unhygenic years of childhood, through close association with pets. The definite host contacts it through eating the flesh and viscera of infected sheep or other secondary hosts. Man is an accidental host and the cycle presumably ends with him.

The first diagnosis made in these four cases is of some interest. In only one of them was echinococcus cyst suspected, and since antigen for the Casoni skin test was not immediately available, diagnosis was made postoperatively from the pathological specimen. Difficulty in diagnosis is understandable because of the relative infrequency of the disease and because of the comparative youth of three of the four native cases. Usually, but not always, the cysts remain uncomplicated until the carrier is considerably older.

Case 4 is of interest for several reasons. First, pulmonary symptoms first began at the age of 9 months, although it was only after the age of 5 years that fluoroscopic evidence of chest-pathology was found. If the initial pneumonic attack at 9 months of age could have been echinococcal in nature, it represents an extremely early infestation. Secondly, no hooklets could be demonstrated and only a bizarre giant cell reaction was noted about chitinous strands of material similar to that seen in the other cases. It is recognized that the diagnosis of this case is not as well established as the others, but it is believed that secondary infection produced the alteration noted.

Other consultants have concurred in this diagnosis.

These cases raise the question of whether the disease is increasing in the United States. Other than these four cases, very few cases have been reported from the Western States. The few cases reported yearly throughout the country are generally of foreign origin. Utah, from which no cases have been reported previously, is the definite focal point of three cases. This number is only exceeded by the number reported from Louisiana. It is possible that the disease will be seen more often in the West.

An intensive program has been carried out in the Department of Zoology of the University of Utah in an attempt to find the definitive hosts that might be responsible for the disease in this region. The stools of 200 dogs and fifteen coyotes have been studied, including the pet dog of the fourth case in the report, but no parasites have been found.

Summary and Conclusions

1. Four cases of echinococcus cyst contracted in the United States are presented:

   a. A case of a 4-year-old girl with a liver-cyst who had lived only in Utah.

   b. A case of a 19-year-old male with a pulmonary cyst who had always resided in Utah.

   c. A case of a 48-year-old man with multiple cysts of both the liver and lungs who had resided in the states of Illinois, Kansas and Idaho.

   d. A case of a 12-year-old boy with a pulmonary cyst who had lived only in Utah.

2. Two cases of hydatid disease which occurred in foreign-born people are briefly mentioned.

3. Casoni skin tests were performed on two of the patients, and were positive. Eosinophilia was not over 1 per cent in any of the cases.

REFERENCES

[1]T. B. Magath: Hydatid (Echinococcus) Disease in Canada and the United States. Am Jour. Hyg., 1937, Vol. 25, 107-134.
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SPINA BIFIDA

WALTER E. RECKLING, M.D.
LUSK, WYOMING

Various authors have discussed the embryology of this defect. Classifications are suggested upon the basis of its involvement and extent. The writer has found no criteria for prenatal diagnosis and there is no method of prevention. There appears to be no treatment for the severe cases which offers any reward. Statistics have not been available to the author to indicate how often this catastrophe occurs but he has had four cases during twenty-five years of active practice. One other case occurred nearby in the practice of a confrere. The mother had an albino eye, and her second pregnancy produced a child totally deaf and unable to talk. This emphasizes the familial tendency and multiplicity in many congenital anomalies.

Two of the four personal cases showed small tumors, lived, are apparently normal and have the deformity as their only abnormality. The case of the confrere died before reaching two years of age. The parents of this child ran the gauntlet of clinics, qualified physicians and quacks, hoping for help.

One of the four cases occurred in a twin, the second twin being normal. The prenatal and family histories in this case were normal. The parents realized the hopelessness of their child, suggested that the child be denied food and allowed to pass on. Fortunately, the child's weakened condition did not permit her to live long.

The above five cases were all girls. This small statistical enumeration can be considered negligible in drawing any conclusions regarding incidence in relation to sex.

The baby herein reported was born on August 15, 1947. There had been nothing in the prenatal or family history to suggest any abnormality. She weighed 6 pounds and 4 ounces at birth and now weighs 39 pounds. Her height is 36 inches. The child's head is enormous. One would expect her to be imbecilic, but she is alert and clever. She talks, answers questions with the usual child's reply of that age, recognizes her visitors, her parents, and calls me by name.

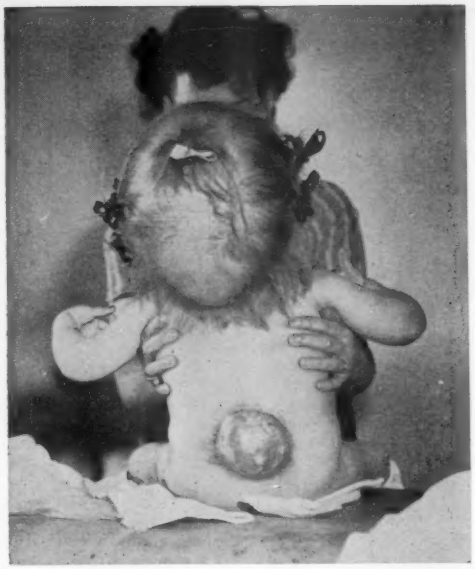


Fig. 1. Child, now past three years of age, being supported by her mother. Note enormous hydrocephalus, which has increased progressively since birth. She cannot support her head, has fair use of arms, but is paralyzed below the level of the tumor.

What should the professional man's attitude toward these cases be? He must know the care, worries, and unpleasantness associated with these unfortunate children. Would it be a kindness to permit severe cases to pass on without reasonable effort to prolong life? Certainly no reputable physician wants to reap the hot wrath of those who are zealously religious or the wild pulse of the press who sells news, regardless. A professional man may modify his advice as he contemplates what is humane and by the way the parents feel about it. He must be forgiven if his mind is influenced by happy optimism of the Scriptures, "The Lord giveth, and the Lord taketh away."

The parents of this child have been a source of great stimulation to me. The child is given every decent care that laboring people can provide, and they do not deplore their misfortune. At the same time, they have accepted the dictum of good and sensible advice and realize there is nothing to be done of practical value. They have refrained from having other children, basing their decision upon the possibility that this condition might be repeated. Furthermore, additional family would lessen the amount of money and care available to this child. With the spinal mass, paralysis of both legs, a hydrocephalic head she is, indeed, a great responsibility.

Zealous churchgoers often measure human values by church attendance. A bevy of the devout called upon this family to inquire of them why they were not regular attendants at Sunday services. This pilgrimage saw the helpless child unable to sit up but playing cheerfully with her dolls, and noted the care and affection shown by the child's parents. They later remarked to me, "Doctor, try to tell these people to go to church! But let us grant that they know more about the teachings of real Christianity than we will ever know."

Conclusion

1. These cases present complicated humanitarian and economic problems.

2. A brain can withstand great stress and strain if the phenomenon is slow in its advent.

3. There is no preventive or curative treatment.

THE AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY

The National Federation of Obstetric-Gynecologic Societies has reconstituted itself as the American Academy of Obstetrics and Gynecology This action was taken at the federation meeting held on June 13, 1951, in Atlantic City in response to the long-felt need for a national society for obstetricians and gynecologists based on individual and personal membership.

The Academy was incorporated on August 4, 1951, as a non-profit corporation under the laws of the State of Illinois. Its objects are listed in the Constitution and By-Laws which were adopted at a meeting at Hot Springs, Virginia, on September 5, 1951. They include "fostering and stimulating interest in obstetrics and gynecology and all aspects of the work for the welfare of women which properly come within the scope of obstetrics and gynecology."

The first business meeting of the Academy will be held at the time of the meeting of the American Congress on Obstetrics and Gynecology in Cincinnati, March 31 through April 4, 1952. The First Annual Clinical Meeting will be held in Chicago, Illinois, during the winter of 1952-53.

Applications for Fellowship may be obtained from the Secretary's office, 116 South Michigan Avenue, Chicago 3, Illinois.

Organization

COLORADO
State Medical Society

William Alexander Liggett, M.D., of Denver, is the new President-elect of the Colorado State Medical Society. He was chosen by the House of Delegates at the 81st Annual Session to serve as President during the 1952-53 year, when he will succeed Dr. Harry C. Bryan.

William A. Liggett, M.D.

The President-elect has engaged in the private practice of internal medicine in Denver since World War II. He is a former Secretary of the Board of Supervisors and for two terms was chairman of the Public Policy Committee of the Denver Medical Society.

He was born in St. Louis, Missouri, June 2, 1901, and received his elementary and secondary education in the public schools of Missouri and Illinois. He received his A.B. degree from the University of Illinois in 1926 and his M.A. degree from the same institution in 1928. Dr. Liggett taught in secondary schools in Illinois for nine years before obtaining his M.D degree from the University of Colorado School of Medicine in 1938.

His internship and residency were taken in internal medicine at Colorado General Hospital. He was on active duty with the A.U.S. during World War II for fifty-four months, with nine months in the C.-B.-I. theater.

Dr. and Mrs. Liggett have three children.

Society Awards Are Made to Four

Two physicians and two non-medical leaders were honored at the annual banquet of the Colorado State Medical Society on September 21 in Denver when they were presented Certificates of Service by President Harry C. Bryan. All were honored for outstanding contributions to furthering the aims and objectives of the Society. The nominations were made by the Board of Trustees and approved by the House of Delegates.

The award to a member was presented to Kenneth C. Sawyer, M.D., of Denver, "for his inspirational leadership which brought to his colleagues a new concept of their duties as citizens." The nomination commented that: "Last year, acting as a private citizen who felt the welfare of our citizens was endangered by some who would destroy the American way of life, Doctor Sawyer gave unselfishly of his energies in the arena of political action."

The award to a non-member went to Mr. Garrett W. Craig, of Brighton, Chairman of the Colorado Division of the American Cancer Society for 1950-51, and a district manager for the Public Service Company of Colorado. The nomination of Mr. Craig included this comment: "It is the opinion of your Board that Mr. Craig endowed the position with qualities of effective leadership and guidance rarely encountered in the activities of voluntary health organizations. His zealous devotion to the fight against cancer was a public service of the highest order to the people of Colorado."

A special certificate was awarded to Douglas W. Macomber, M.D., of Denver, "on completion of twenty years of devoted service as scientific editor of the Rocky Mountain Medical Journal."

A second special certificate was presented to Mr. J. Peter Nordlund, of Denver, attorney-at-law and the Society's legal counsel, for "outstanding public service in the field of medical and public health legislation."

Dr. Ervin A. Hinds, retiring President, received a Certificate of Service from President Bryan, continuing the Society's custom of honoring the outgoing President for his contribution in the highest office of the organization.

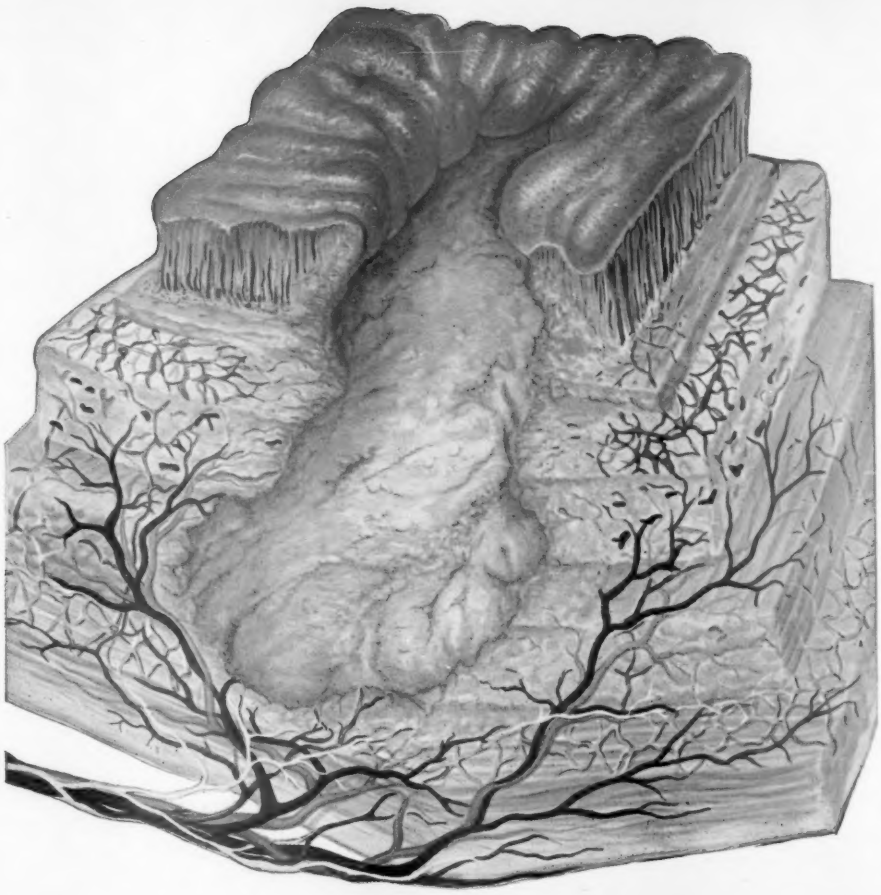
Colorado Elects Honorary Members

Honorary Membership in the Colorado State Medical Society was voted for two distinguished friends of medicine by the House of Delegates at the 81st Annual Session, upon approval of the Board of Councilors.

The actions were in accordance with a provision in the By-Laws of the Society which provides that any member may nominate for Honorary Membership "persons who have made an outstanding contribution to the purposes of this Society."

Andrew S. Brunk, M.D.

Nominated by Dr. George A. Unfug was Andrew S. Brunk, M.D., of Detroit, Michigan, former President of the Michigan State Medical Society, for his contribution as founder of the Conference of Presidents and Other Officers of State Medical Associations. Doctor Brunk was the first President of the Conference and was cited in the nomination for activity which inspired the AMA "to greater activity in the fields of medical economics, medical sociology and medical public relations."



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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

The second Honorary Membership was voted to Mr. Joseph William Holloway, L.L.B., of Chicago, who has been with the Bureau of Legal Medicine and Legislation of the A.M.A. since 1925, and its director since 1942. His nomination was by Drs. Leo W. Bortree and William H. Halley.

J. William Holloway

Mr. Holloway was honored for his vital legal aid and counsel to the Colorado State Medical Society thirteen years ago when there was "a vicious attempt by selfish interests to destroy Colorado's public health and medical licensing laws through a proposed constitutional amendment at the 1938 general election."

In those trying times Mr. Holloway spent many weeks in Colorado devoting his entire time to aiding medical forces opposing the legislation and educating them in practical politics, a field then unknown to the profession.

There are only four other Honorary Members of the Colorado State Medical Society. They are Dr. Florence R. Sabin, Denver; Dr. Walter L. Bierring, Des Moines, Iowa; Dr. Earl Whedon, Sheridan, Wyoming, and Dr. Paul R. Hawley, Chicago.

Obituaries

BURNETT A. FILMER

Dr. Burnett A. Filmer of 1331 South Marion Street, Denver, died August 14, 1951, at the age of 72, in the Fort Logan V.A. Hospital, after a short illness. He had practiced ophthalmology in Denver for many years.

Dr. Filmer was born in Amityville, New York, on June 26, 1879, and moved to Iowa with his family when he was a child. Following high school, he attended Iowa Wesleyan College. In 1906 he received his M.D. degree from the Medical School of the University of Louisville, Kentucky. Later, he did postgraduate medical work at the University of Poitiers in France. For a short time he practiced general medicine in Iowa and Utah. In 1908 he came to Denver where he attended the old Gross Medical School for the purpose of postgraduate study in ophthalmology, and practiced that specialty in Denver since that time.

During World War I, Dr. Filmer served overseas as an Army medical officer; his rank at the time of his discharge was Lieutenant Colonel. He had been active in the American Legion for many years. In 1920, he became an official of the Veterans' Administration and served in Denver, Washington, and Honolulu. When he retired in 1942, he was manager of the Hawaiian office of the V.A. Dr. Filmer was a 32nd degree Mason and a member of George Washington Lodge and Rocky Mountain Consistory No. 2. His college fraternity was Beta Theta Pi, and he was a member of the Denver County Medical Society and the Colorado State Medical Society.

FRANK BUTLER STEPHENSON

Dr. Frank Butler Stephenson, Denver radiologist, died September 5, at the age of 76.

Doctor Stephenson was born February 1, 1875, in Bowling Green, Indiana. As a young man he moved to Georgetown, Kentucky, where he attended Georgetown College. In 1902, he came to Denver and was graduated from Denver and Gross College of Medicine in 1907. For the following six and one-half years he made his home in Marble, Colorado, where he was physician and surgeon for the Colorado Yule Marble Company. He practiced radiology in Denver from about 1914 until October, 1949. He was radiologist at Children's Hospital for thirty years. He was also a member of the staff at Presbyterian Hospital and at Weld County Hospital and associate professor of radiology at Colorado University Medical School. Doctor Stephenson was a former Secretary and Past President of the Colorado State Medical Society. He was a member of the American Medical Association and the American Roentgen Ray Society, the Radiological Society of North America, Inc., and the American College of Radiology.

Those of us who knew Doctor Stephenson as a man and were personally familiar with his outstanding accomplishments in the field of radiology have the deepest sense of irreparable loss. His soundness, honesty and sense of fair play are attributes which will have a lasting influence on all those with whom he came in contact.

HOWARD BROWN YOUNG

Dr. Howard Brown Young of 1345 Cherry Street, Denver, died August 11 in St. Luke's Hospital after a long illness. He was 78 years of age.

Doctor Young was born July 5, 1873, in Crestline, Ohio. He moved to Denver in 1886. In 1899, he graduated from Denver University School of Medicine. He practiced continuously in Denver since that time, specializing in obstetrics and gynecology.

Auxiliary

ANNUAL REPORT FOR 1950-51

Our Organization Chairman, Mrs. R. F. Courtney, informs us that the Colorado State Medical Society now has twenty active Woman's Auxiliaries, five of which have been organized this year; namely, Las Animas County, Prowers, Huerfano County, Clear Creek Valley, and Fremont County. Our total membership is 805, an increase of 149 over last year.

Mrs. T. E. Atkinson, chairman of our Emergency Benevolent Fund, reports the balance on hand September, 1950, was $5,054.70, and the balance on hand July 31, 1951, was $5,549.48. No requests were made from this fund.

Mrs. J. S. Haley, Program Chairman, states that the programs have been varied, with book reviews, addresses on Socialized Medicine, Congressional and Legislative reports, etc. Most Auxiliaries have sponsored or assisted with National Hospital Day, Mobile X-ray Units, Red Cross, March of Dimes, Tuberculosis Seals, Crippled Children, American Cancer Society, Heart Fund Drive, and Nurse Recruitment. All have assisted their local hospitals in some way.

Mrs. L. Scott Frank, Jr., reports the Health

Education Committee has given eight scholarship gifts of $50 each during 1950-51 and a gift of $100.00 to the American Medical Education Foundation. Plans are under way for Auxiliary participation in the Colorado Highway Safety Council's program for action for 1951-52.

Mrs. John Grow, Public Relations Chairman, says several Auxiliaries have had one or more joint meetings with their Medical Societies. Some have entertained or had joint meetings with other women's groups, such as P.T.A., P.E.O., dentists and druggists' wives, nurses and church groups. A few have provided speakers for Health Study for other groups. The State Auxiliary staffed and jointly sponsored, with the State Medical Society, a Health Education Exhibit booth at the Great Western Stock Show in Denver last January.

The report of the Committee on Careers in Nursing tells us they have been very busy sending much material of interest and help to the County Auxiliary Chairmen, all of which has been used with rewarding results.

Mrs. McKinnie Phelps, Legislative Chairman, reports many hours of telephoning, doorbell-ringing, poll-hauling, etc., which can never be totaled. Auxiliary members have been encouraged to use influence in all other local clubs and organizations wherever education, interest and action involving medical affairs are concerned.

Mrs. R. Waldapfel, Bulletin Chairman, reports that subscriptions have increased to 223 for the official publication of the Woman's Auxiliary to the American Medical Association.

Now, a brief look at some of the outstanding and interesting things the County Auxiliaries have reported.

Arapahoe County spent sixty hours making cancer bandages, and maintained their Loan Closet, supplying the County Nurses with the two wheel chairs they needed. They also sewed four dozen special muslin bags for nurses' kits. They donated $50 to the Student Nurse Scholarship fund.

Boulder County had seven fine programs throughout the year. They showed three cancer films: "Breast Self-Examination," "The Doctor Speaks His Mind," and "Traitor Within." They took approximately 600 current books and magazines to the hospitals each month. They gave $50.00 to Boulder Sanitarium for needed equipment. At a morning coffee they cleared $76.50 for a nursing scholarship, and they had open house at their hospitals on National Hospital Day.

Denver County Auxiliary has two philanthropic objectives, namely: Donation of funds and personal service. Contributions amounting to $565.00 were distributed to Student Loan Fund, State Educational Fund, Achievement Awards to Medical Students, Florence Crittenton Home, support of Dr. Tim, Detective, radio programs, and other worthy causes. Many hours of service were donated by the members for various projects.

Eastern Colorado Auxiliary with its twelve members had four meetings, one being a silver tea for the Cancer Control program, at which they showed a cancer film. They assisted with Hospital Day and Nurse Recruitment program May 11 at Kit Carson Memorial Hospital, and have helped with all the various drives and with local projects at their respective fairs.

El Paso County had eight regular monthly meetings and increased their membership about 50 per cent. They contributed time, work, and money for the fall political campaign, Christmas Unlimited, UNESCO, Visiting Nurses' Association, the Red Cross, Cancer Society, Mobile X-ray Unit, and their two local Schools of Nursing. Last September they entertained at a tea for the ladies attending the State Convention in Colorado Springs, which many of us were privleged to enjoy.

Huerfano County, organized on March 27, 1951, reports a 100 per cent membership, with five doctors' wives in the county and five chapter members. Mrs. Paul Mathews is already working diligently with the Nurse Recruitment program and with the fine spirit of fellowship and cooperation within this, the smallest Auxiliary in the state, great things can happen.

An enthusiastic report from Mrs. Morrell of Larimer County gives us all encouragement. They voted to have eight meetings during the year instead of the four they had prevously enjoyed. This in itself was a big step forward. They entertained the dentists' wives, a fine gesture in public relations, and sponsored a bingo party, donated by the druggists, the proceeds of which bought a walker for the new Loveland Hospital. They also had a vase shower for the Larimer County Hospital.

And now a surprise—a report from Las Animas County, just organized on January 23, 1951, with seven active members and one associate charter member. They are off to a wonderful start with four meetings a year. Their Health Education and "Today Health" Chairman reports that the doctors and dentists of the county have subscribed 100 per cent to "Today's Health" through the Auxiliary. In May they entertained a group of High School girls and others at a tea in the interest of "Careers in Nursing." By serving as volunteers at their Health Center during clinics and by other good works, they are already making themselves felt as an organization. Good luck, Las Animas County!

Mesa County had a fruitful year, with seven well-attended, interesting meetings following dinner together. They gave a benefit bridge party, the proceeds of which were given to the heart fund, and assisted with the drive by making and placing hearts in public places. They gave $50.00 to the Nurse Rcruiting program and did a great deal of sewing for St. Mary's Hospital as well as supplying scrapbooks and materials for the pediatric ward. They assisted with the tea following the dedication of the new St. Mary's Hospital, and were hostesses to the ladies attending the Spring Western Slope Clinic in Grand Junction. They enjoyed a Christmas dinner party with the doctors, and also a joint meeting with them in May. Beth Oleson, the Auxiliary President, was one of the three from Mesa County who went to Denver to take a course in "Nursing Aspects in Atomic Warfare," which she gave to approximately 100 nurses and people connected with the medical professions, upon her return home.

Morgan County has accomplished results with their Nurse Recruitment program. They took six High School girls through several of the hospitals in Denver, and out to D.U. and four of these girls are going to nursing schools this fall. This Auxiliary has fine fellowship with their Medical Society, enjoying dinner with the doctors every two months, and then having their separate meetings.

Pueblo County had a successful, interesting year with seven meetings. Their primary project for many years has been help for their

pediatric ward. At each meeting they bring their own material and make diapers, and each week two women assist in the Curative Workshop. In December they made about seventy-five attractive stockings, supplying each with a candy cane for the Crippled Children's Christmas party. They gave a tea for the Senior girls interested in nursing, and contributed $100.00 toward the State Nurse Scholarship Fund.

The aim of Weld County Auxiliary is: "To keep health and all matters concerning health before the public at all times, and to be of service wherever and whenever possible" From their very fine report we learn that they have really lived up to their aim! In the fall, preceding election, many hours were spent to further the interests of better government and help defeat socialized medicine. Gifts for veterans at Fitzsimons Hospital were taken to the Christmas tea, and funds were voted to supply a basket of fruit to the patients of their local Hospital for the Aged and Infirm. During the Christmas holidays a tea was given by their Auxiliary board members for those student nurses home for the holidays and those high school students who had expressed an interest in a nursing course. Five tours of Denver Schools of Nursing were made during the year with eighty-eight girls participating. Seven Weld County students are entering nursing schools this fall. Literature was supplied to many local organizations in an effort to keep the lay public aware and interested in all things concerning health. "Dr Tim, Detective," radio programs were widely publicized and listened to with interest by a large number of persons. This Auxiliary cooperated with the Clean Streams Committee for Colorado, and interested many other organizations in his project. In May the Greeley Health Council sponsored Area Field Health Day, with sixteen organizations taking part. The Auxiliary sponsored three booths out of the eighteen; namely: Pre-natal, Nurse Recruitment and Clean Streams. Blood typing was carried out all day and continuous health movies were run. There were 1,387 registrants for the day.

In conclusion, isn't this "bird's-eye-view" of our work throughout the state heartwarming and inspiring? We may indeed be thrilled over the increased interest and the gratifying results of our efforts. However, there is so much more to be accomplished. My hope is that this report may give us a new vision, and the resolve to return to our homes with renewed vitality to carry on the wonderful work of our Woman's Auxiliary to the Colorado State Medical Society.

MRS. H. H. ZEIGEL,
Historian.

PRESIDENT'S MESSAGE

The year 1950-51 I will always recall with pleasant memories, for in serving as your President I have had the opportunity to meet and work with many interesting people. As you know, the real work of the State Auxiliary is done by the members, who so willingly give of their time and talents to serve as officers and chairmen on both the county and state level. Therefore, the details of the year's accomplishments will be found in the Annual Reports from the Officers and Chairmen of the various committees and County Presidents.

On the National level, I attended the National meeting at San Francisco in June, 1950; the President's Conference at Chicago in November,

Two of these physicians suspected the worst...

but not until the significance and the incidence of amebiasis were thoroughly revealed at a hospital staff meeting. This meeting was held in a large city well north of the Mason-Dixon line, hardly a "tropical" climate, yet the incidence was high.*

The two staff men recognized that the symptom pattern of amebic dysentery fitted their experience of several months past and stool examination revealed that they, too, had amebiasis. A course of treatment for these physicians with Milibis-Aralen was completely successful.

Milibis — bismuth glycolylarsanilate — has given excellent results in thousands of cases. In 82.6% of patients followed parasitologically for prolonged periods, negative stools were obtained consistently after 1 to 4 courses of Milibis.

Because intestinal amebiasis may be complicated by extra-intestinal involvement, it is recommended that Aralen (chloroquine) diphosphate be employed in addition to Milibis for the treatment of all cases of amebic infection.

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*Towse, R. C., Berberian, D. A., and Dennis, E. W.: *New York State Jour. Med.*, 30:2035, Sept., 1930.

1950; was appointed to serve as the 1951-52 Western Regional Chairman for Today's Health at the national meeting held at Atlantic City in June, 1951. Eight delegates were appointed to represent Colorado at the National Meeting at Atlantic City, namely: Mrs. Francis Adams, Pueblo; Mrs. John S. Bouslog, Denver; Mrs. Harry Coper, Denver; Mrs. T. E. Heinz, Greeley; Mrs. Arnold Minnig, Denver; Mrs. William Rettberg, Denver; Mrs. Herman Stein, Denver; Mrs. W. L. Wright, Golden.

On the State level, we have held three board meetings: the Mid-Year Conference at Denver in February; the Annual Meeting at Denver in September; such other committee meetings as were necessary to transact the business for 1950-51. We held two committee meetings with the Advisory Council of the Colorado State Medical Society. As your President, I attended the conference on "Dr. Tim, Detective," of the State Medical Society; monthly meetings of the Colorado Co-ordinating Council of Woman's Organizations; the Governor's Highway Safety Conference at Denver, June 29-30; Colorado Health Council Meeting; and assisted with the entertainment for the Rocky Mountain Medical Conference at Denver on May 9-11.

On the County level, whenever possible, I visited County Auxiliary Units who indicated a desire for such a visit by the State President; assisted by Mrs. Courtney, Organization Chairman, in organizing five new Auxiliaries, namely: Las Animas, Prowers, Huerfano, Clear Creek Valley, and Fremont.

Mrs. H. H. Zeigel, State Historian, has prepared a résumé of the Annual Reports mailed to us by the County President, State Officers and Chairmen in preparation for the Annual Meeting today, which she will read in a few minutes. These reports have been mimeographed and a copy of each will be placed in the State files. Those of you wishing copies of these reports to take home and read at your leisure will find a complete set stapled together for you here today.

May I take this opportunity to thank each of you for the splendid work you have done this year and for the wonderful spirit of fellowship and cooperation which has made it a real privilege to serve as your President for 1950-51.

MRS. HARRY GAUSS.

REGIONAL MEETING AMERICAN COLLEGE OF PHYSICIANS

The Regional Meeting of the American College of Physicians will be held in Denver, February 12, 1952. At this meeting papers will be presented taking up the various phases of internal medicine. As this meeting precedes the Mid-Winter Clinics, it will be convenient for all physicians to attend. As in times past, all physicians, interns and medical students are welcome to attend the meeting. There is no registration fee charged.

Physicians who would like to contribute papers to this program should correspond directly with the Program Chairman, Dr. Harold R. Carter, 550 Metropolitan Building, Denver.

Further program announcements will be made in this Journal at a later date.

COLORADO
State Health Department

CONGENITAL SYPHILIS (MEDICAL AND PUBLIC HEALTH ASPECTS)

National reports show that the reduction of congenital syphilis has not been so marked as that of other forms of syphilis since the use of penicillin therapy over the last six years. Approximately 14,000 reported cases occur every year in the U.S.A.—20 per cent under one year of age. In 1948, 78 per cent of live births and 73 per cent of reported congenital syphilis occurred in the thirty-eight states having prenatal blood testing laws—evidence that it takes more than laws to improve public health. Since medical science has provided good, specific diagnostic tests and specific therapy, the responsibility for eradicating this disease lies with private practitioners and public health workers.

Colorado's recent experience with congenital syphilis is summarized in the table below:

Year—	No. of Reported Cases	No. of Reported Cases Under 1 Year	% of Reported Cases Under 1 Year
1947	73	5	7%
1948	56	5	9%
1949	62	8	13%
1950	63	4	6%

Recommended steps for physicians, hospitals and health workers to adopt in further reducing congenital syphilis are:

1. Obtain two blood tests as a routine part of every pregnant woman's care—one early, the other late in pregnancy or at time of delivery, thus detecting 25 per cent of syphilitic pregnancies in which the original blood test was negative.

2. Regard a pregnant woman with untreated syphilis as a medical emergency. Adequate treatment of the mother, even late in pregnancy, is the surest and easiest way to treat any possible syphilis in the offspring.

3. Regard all infants of untreated (or inadequately treated) syphilitic mothers as possible cases of congenital syphilis, even in the face of a negative cord blood test. These babies should be followed by doctors and public health nurses for four months with blood tests at least once a month.

4. One can be misled by both false-positive and false-negative blood tests in newborn children of syphilitic mothers, but by the third or fourth month, the blood test will be a reliable sign of either the presence or absence of syphilis.

5. Obviously, clinical signs suggestive of congenital syphilis (bone, skin and mucous membrane lesions) should be watched for during these first few months. In many syphilitic infants they are not present at birth.

6. Since it is so often difficult to follow up those families in which syphilis exists, a full course of treatment should be given immediately to any infant suspected of congenital syphilis if there is an indication that close follow-up cannot be accomplished.

Penicillin has been demonstrated to be the single drug of choice in treating early congenital

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syphilis, because of its efficiency, ease of administration and lack of serious reactions.

Dosage: (1) Aqueous Penicillin, 100,000 units/kg, given in divided doses of 120 injections at three-hour intervals.

(2) Procaine Penicillin, 150,000-300,000 units, once each day for 10-14 days (this treatment schedule awaiting final evaluation).

Satisfactory response to penicillin therapy of congenital syphilis is more easily obtained in younger children, i.e., age three to six months. When treatment is delayed until after the age of two years, sero-negative results are much less frequent.

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COLORADO
Medical School Notes

Appointment of a radiological physicist from Mayo Clinic to the University of Colorado School of Medicine staff has been announced by Dean Robert C. Lewis. He is Arnold Feldman of Rochester, Minnesota, who was appointed an instructor in radiological physics in the Department of Radiology at the school. Mr. Feldman received his Bachelor of Science degree from the Pennsylvania State College in 1944 and was awarded his Master of Science degree from California Institute of Technology in 1948. For the last two years, he has been assistant to the radiological physicist at Mayo Clinic in Rochester.

A former Western Reserve University biophysics instructor has been named to the faculty of the University of Colorado School of Medicine, Dean Robert C. Lewis has announced. He is Dr. Seymour Levine, who at present is taking specialized training for his new duties at the famed Cooperstown Laboratories in Cooperstown, New York. Dr. Levine will serve as an instructor in biophysics in the Department of Biophysics at the University of Colorado Medical School under Dr. Theodore Puck, head of department. A graduate of the University of Illinois, Dr. Levine is a former student of the CU Medical School. In 1949, he was awarded a Post-Doctoral Fellowship here by the Atomic Energy Commission. Prior to going to Cooperstown, Dr. Levine was a member of the faculty of Western Reserve University in Cleveland, Ohio, for two years.

Appointment of a neuro-surgeon to the faculty of the University of Colorado School of Medicine was announced by Dean Robert C. Lewis. He is Dr. George Milton Shy, who comes to the CU Medical School from McGill University in Montreal, Quebec, Canada, where for the last three years he has taught neurology and neuro-surgery. Dr. Shy has been appointed an assistant professor of neurology in the Department of Medicine in the medical school. A graduate of both Oregon State College and the University of Oregon Medical School, Dr. Shy served his internship in Coffee Hospital in Portland, Oregon. Prior to going to McGill University, he taught at Oregon State. Dr. Shy also spent two years abroad in special study at the National Hospital in London, England. He will serve under Dr. Gordon Meikeljohn.

POSTGRADUATE COURSE IN CHEST DISEASES

A postgraduate course for physicians is to be given at the University of Colorado Medical Center on October 18, 19, and 20, 1951. The Colorado Trudeau Society and the Rocky Mountain Chapter of the American College of Chest Physicians are co-sponsoring this course. The instructors represent the medical staff of the National Jewish Hospital, the Denver Veterans' Administration Hospital, Denver General Hospital, Colorado General Hospital and the Fitzsimons Army Hospital.

Dr. Michael L. Furcolow, Senior Surgeon, United States Public Health Service, University of Kansas Medical Center, will be guest speaker at a dinner for the physicians enolled in this course and the instructors at the University Club on Friday, October 19, 1951, at 6:30 p.m.

The registration fee is $5.00, and tuition will be $25.00. All applications and inquiries should be sent to the Director of Graduate and Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 7, Colorado.

POSTGRADUATE CONFERENCE ON HEART DISEASE

The Colorado Heart Association, the State Department of Public Health and the University of Colorado School of Medicine are sponsoring a postgraduate conference on Heart Disease, November 14, 15, 16, and 17, 1951.

The opening event in this program will be a dinner meeting on November 14 at the Cosmopolitan Hotel, Denver, to which all physicians and the public are invited. D. Paul D. White of Boston, Massachusetts, who is an international authority on diseases of the heart, will discuss "The Problems of Heart Disease Forty Years Ago and Now."

The following three days will be devoted to an intensive review of the developments in the diagnosis and treatment of disease of the heart and vessels. Additional guest lecturers will include Dr. Robert P. Glover of Philadelphia, Pennsylvania, who is an authority on surgery of the heart; Dr. John P. Hubbard, Professor of Preventive Medicine at the University of Pennsylvania, will discuss "The Role of Preventive Medicine in Heart Conditions Including Congenital Defects and Rheumatic Fever;" and Dr. George R. Herrmann, Professor of Medicine at the University of Texas, and one of the outstanding teachers of cardiology in this country, will take part in these discussions. Other members of the instructional staff will be composed of the faculty of the University of Colorado School of Medicine. Newer diagnostic methods; a review of the present status of the surgical aspects of congenital heart disease; and the place of the newer antibiotics will receive special emphasis. There will be scientific exhibits to present the latest developments in cardiovascular research.

This Heart Disease Conference will be attended by physicians and surgeons throughout Colorado and the surrounding Rocky Mountain States.

The staff of the Fitzsimons Army Hospital will present a three-day postgraduate course on Clinical Electrocardiography November 12, 13, and 14, 1951, immediatey preceding this course in heart disease. This program is primarily for Army physicians; however, any interested

doctors are cordially invited to enroll as guests of the Fitzsimons Army Hospital staff.

Inquiries regarding registration for this postgraduate course should be sent to the Director of Graduate and Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver, Colorado.

FALL POSTGRADUATE COURSES

Conference on Chest Diseases: October 18, 19, 20, 1951—This intensive review of diagnosis and treatment of lung diseases will be conducted in the major teaching hospitals in Denver. An outstanding authority in this field will be the guest lecturer. The Colorado Trudeau Society and the American College of Chest Physcians are co-sponsoring this course. The final program will be mailed at a later date.

Heart Disease: November 15, 16, 17, 1951—Dr. Paul D. White, Boston; Dr. Gordon B. Myers, Detroit; and Dr. John P. Hubbard, Philadelphia, form a teaching team of authorities in Cardiology and are capable of bringing to you the most recent developments in vascular diseases. This is an unusual opportunity to review the problems of cardiology with these three outstanding medical teachers. The Colorado Heart Association and the State Department of Public Health are co-sponsorng this course. A three-day course in Clinical Electrocardiography at the Fitzsimons Army Hospital on November 12, 13, 14, 1951, will be open to any physician attending this symposium without cost. The final program will be mailed at a later date.

Poliomyelitis: December 13, 14, 15, 1951—This course is planned to review the diagnosis and management of patients with poliomyelitis. This disease presents an increasing medical problem and every physician is called upon to answer questions and advise patients and their families concerning this disease. The instructors in this course have had wide experience in managing poliomyelitis cases during the recent outbreak in Colorado.

Neuro-Anatomy Seminars: Thursday evenings beginning August 16, 1951—A series of seminars in neuro-anatomy and neuro-physiology has been set up for the resident groups of the various hospitals affiliated with the Medical Center and for any other qualified persons who meet the requirements of our clinical graduate program. These seminars will be presented on Thursday evenings from 7:00 to 9:00 in the Anatomy Lecture Room, M-322, at the School of Medicine beginning August 16, 1951, and extending through December, 1951. Each student will be expected to present material in seminar form at least once during the course; it will be conducted in discussion and conference plan by Dr. Milton Shy from the Department of Neurology and Dr. Eli Goldensohn from the Department of Physiology. Clinical graduate credit can be obtained.

Pathological-Physiological Seminars: Tuesday evenings, beginning September 24, 1951—Many physicians have requested that a course involving the basic medical sciences be presented. This course will be of practical interest to interns and residents who want a review in preparation for the specialty board examinations. This course will be given every Thursday evening from 7:00 to 8:00, beginning September 24, 1951, and continuing through December 15, 1951. Practitioners of medicine in the Denver area are invited to enroll in this course. Clinical graduate credit will be given.

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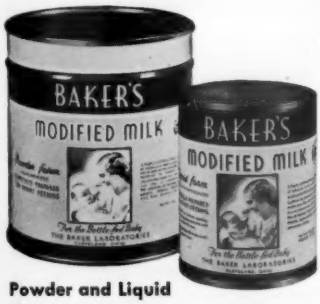

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WYOMING
State Medical Society

AT REST ON MOUNT MORAN

On Tuesday, November 21, 1950, at approximately 5:50 p.m. when a cold front was moving in from the north, Tribesman II, C-47, operated by the New Tribes Mission of Chico, California, flew straight into the northeast ridge of Mount Moran in the Grand Teton National Park at just under the 12,000-foot level . . . Paul Petzold, Climbing Guide, and Park Ranger Blake C. VandeWater made a hazardous winter climb to ascertain that no one survived the crash.

After this, park officials began making plans for the official investigation of this accident. As State Registrar of Vital Statistics, it was our duty to determine for the official records whether twenty-one more deaths had occurred in Wyoming in 1950, and also to make out the death certificates which would make it possible to settle the passengers' estates without waiting seven years. We were fortunate in being able to secure the services of Dr. DeWitt Dominick, Cody, an excellent mountaineer, as a consultant for this purpose.

After a year of particularly heavy snowfall, the climb was delayed in the middle of July. Ranger VandeWater and Climbing Guide Glen Exum made another ascent and set the date of August 4 as a likely time for the snow to be sufficiently melted to make the investigation. . . . A couple of days before this date, the ones to make this climb began gathering at the park headquarters. Those not experienced in mountaineering spent one day in the Petzoldt-Exum Climbing School at Jenny Lake.

The party was then delayed one more day on account of weather but the personnel of it was finally determined to be the following: Paul Petzoldt, in charge of the climb; Rangers Blake C. VandeWater and Richard Emerson, representing the Grand Teton National Park; Glen Exum, partner in the Petzoldt-Exum Guide Service and assistant guide for this trip; George Atteberry, Jackson, photographer; Ralph S. Johnson and Carl J. Peterson, representing the Wyoming State Aeronautics Commission; Rev. J. Ruskin Garber and Clifford E. Martz, repre-

senting the New Tribes Mission; and Drs. DeWitt Dominick and Franklin D. Yoder, representing the State Health Department.

This party left the east shore of Jackson Lake on the morning of Sunday, August 5, and proceeded to Moran Bay and then finally to Bear Paw Bay where the party disembarked. Paul Judge, Assistant Park Superintendent, and Ranger VandeWater piloted the boats. One boat was thus left on the shore of Bear Paw Bay. The party then proceeded under the guidance of Paul Petzoldt through the valley descending from the Skillet Glacier. Most of this was done on moose trails to avoid as much as possible the thick trees and brush . . . Camp was made that night at near timberline on the northeast ridge where the main difficulty was finding enough level spots for sleeping bags and the steep route to the nearest snow field for water . . . Following rain and hail, a good fire and hot tea revived our spirits . . . Early the next morning one member of the party was moved to say, "this isn't rest, this is just preservation." But Paul's hot coffee and breakfast got the group under way with lighter packs on up the northeast ridge.

The Jackson Hole valley was covered with clouds but we were in the bright sunshine up on the mountain . . . There were some places where, in mountaineering terms you would say, there was considerable exposure This meant, in this case, 2,000 feet of air under your hip pocket . . . By the use of fixed ropes, pitons, and Karabiners these places were successfully negotiated and we came out on this narrow ridge. where the remainder of the distance could be climbed in close formation, unroped . . . The reason for being in close formation was so that slide rock could not gather momentum and injure the party below.

The crash scene was reached and the work of identification and investigation was begun . . . The plane had apparently struck one large rock, now blackened by fire, and had actually displaced it a little distance . . . The ridge at this point is at a pitch of approximately 45 degrees. The tail of the plane was at the north edge of the northeast ridge which fell off between 1,500 and 2,000 feet precipitously . . . Fifteen feet to the south of the plane the ridge dropped off 2,000 feet directly to the Skillet Glacier . . . By examination of the remains and personal papers (there had been less fire at this crash than had been originally supposed) we were assured of the presence of approximately seventeen of the twenty-one passengers listed at the time of departure from Chico . . . A definite figure will depend on dental identification . . . Part of the remains were picked up below Skillet Glacier . . .

A brief memorial service was held by Rev. Garber and then the party descended by the same route . . . Only because of the excellent cooperation of all members of the party was it possible to do the work in one day and still return that evening . . . We wish to express our appreciation for this cooperation and particularly was it a tribute to the faith of the Mission representatives that they were able to be so helpful in this work for their departed friends.

Grand Teton National Park Service representatives and the guides went out of their way to make things come out right for this trip . . . One cannot help but feel that a trip of this

sort brought all the members of the investigating party closer together in a spirit of cooperation and friendship . . . Of all the non-professional climbers, Dr. Dominick was perhaps the outstanding mountaineer.

F. D. Y.

UTAH
Medical School Notes

The University of Utah College of Medicine has established a program of postgraduate medical education with the assistance of a sizable contribution from the W. K. Kellogg Foundation. The program in postgraduate medical education will include short courses to be presented in Salt Lake City and teaching programs outside of Salt Lake City in the Intermountain area. Dr. John F. Waldo has been designated as Director of the program and is presently surveying the Intermountain area before activating the actual teaching program. The program will be directed at the four so-called Intermountain states, namely: Utah, Idaho, Arizona, and Nevada.

Dr. M. M. Wintrobe, Professor and Head of the Department of Medicine, was invited to serve as Visiting Professor during the late summer months at the Institute of Medical and Biological Studies of the University of Mexico.

Dr. T. F. Dougherty, Professor and Head of the Department of Anatomy, lectured at the Swiss Academy of Medicine during their meetings in Switzerland, September 29 to October 2. He also spoke at the Pasteur Institute at Paris and at the Radium Institute of the Pasteur Laboratories during his visit.

Dr. Louis P. Gebhardt, Professor and Head of the Department of Bacteriology, attended the Second International Poliomyelitis Conference in Copenhagen, Denmark, early in September, at the invitation of the International Poliomyelitis Congress. He will report on recent developments in polio research under his direction at this institution.

Dr. Urs P. Hoesley has been named Assistant Research Professor of Anatomy.

Dean John Z. Bowers addressed the Nevada State Medical Society and the Utah State Medical Society during their September meetings.

ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter prize award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held in St. Louis, Missouri, May 1, 2, and 3, 1952, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed 3,000 words in length; must be presented in English; and a typewritten double-spaced copy in duplicate be sent to the Corresponding Secretary, Dr. George C. Shivers, 100 East Saint Vrain Street, Colorado Springs, Colorado, not later than March 1, 1952. The committee, who

will review the manuscripts, is composed of men well qualfied to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for the presentation of the prize award essay by the author, if it is possible for him to attend. The essay will be published in the Annual Proceedings of the Association.

GEORGE C. SHIVERS M.D.,
Corresponding Secretary.

AMERICAN HEART ASSOCIATION PRESIDENT TO SPEAK AT STATE HEART GROUP MEETING

Dr. Louis N. Katz, President of the American Heart Association, and Director of Cardiovascular Research, Michael Reese Hospital at Chicago, will speak at an open meeting of the Colorado Heart Association's annual dinner meeting. Dr. Katz is an internationally known author of numerous papers, pamphlets and books on cardiovascular subjects. Dr. Katz's address, "The Work of the American Heart Association," will be in the Colorado Room of the Shirley-Savoy Hotel Monday, October 1, at 6:45 p.m. Dinner reservations (Swiss Steak, $2.50) can be made at MA. 2221, Ext. 55.

A revised list of "Sources of Motion Pictures on Health" has been prepared by the Committee on Medical Motion Pictures of the American Medical Association. This new mimeographed list includes nine pages of addresses of the major loan and rental libraries, the State Health Department's film libraries and references to printed lists and catalogs. Copies are available from Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Tuberculosis Abstracts

Issued Monthly by the National Tuberculosis Association

Vol. XXIV JULY, 1951 No. 7

THE SIGNIFICANCE OF THE ISOLATED PULMONARY NODULE

David V. Sharp, M.D., and Thomas J. Kinsella, M.D., Minnesota Medicine, September, 1950.

The increasing use of chest roentgenograms has confronted physicians with a variety of unsuspected chest conditions including the isolated pulmonary nodule. This condition, variously designated as the "pulmonary coin lesion," the peripheral nodule, or dismissed as a "tuberculoma," presents diagnostic and therapeutic implications far out of proportion to the seemingly insignificant nodule itself.

During the past four years, a total of 96 such nodules in patients from 12 to 85 years of age have been studied. These nodules differed widely in appearance and were found in all segments of the lung. In size they varied from one to four centimeters in diameter, thereby excluding the large bronchiogenic carcinomas and the smaller calcified areas—the Ghon tubercles. They were round or ovoid in contour with edges smooth, fuzzy or irregular. The density varied from very soft infiltrates to extremely dense nodules. The presence of calcium deposits does not establish the benign or malignant nature of the process. Growth of a nodule has been noted in fibroma, harmartoma, adenoma and the granulomas, while lack of growth may occasionally be noted in carcinoma over many months. All nodules were entirely asymptomatic with two exceptions (bleeding from pulmonary cysts).

When confronted with a patient whose x-ray films reveal an isolated pulmonary nodule, careful studies should be instituted at once to attempt to determine the nature of the lesion. A careful history and complete physical examination should be supplemented by special diagnostic procedures as indicated. An exhaustive search must be made for primary tumors elsewhere and for underlying disease which might produce a local lung lesion. Laboratory studies may give a clue to the etiology of the nodule. Skin testing particularly for tuberculosis, histoplasmosis, blastomycosis, coccidioidomycosis and echinococcus disease may help to establish a diagnosis in an obscure pulmonary infiltration. Our experience would indicate, however, that skin test reactions are of suggestive rather than absolute diagnostic value.

The relative frequency of tuberculosis and its tendency to produce nodular areas of disease on the lung must place it high on the list of suspected causes of such nodules. Sputum, if any, must be carefully studied for mycobacterium tuberculosis. In its absence, bronchial secretions or washings obtained bronchoscopically

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or gastric washings may be studied culturally or by guinea pig inoculation. However, the relatively high incidence of malignancy in this series (27.3 per cent) and the usual rapid growth of bronchial malignancy make one seriously doubt the wisdom of delaying action for laboratory reports. Failure to recover organisms from secretions does not rule out tuberculosis. Malignant cells in bronchial secretions of patients with isolated pulmonary nodules are found but rarely.

The most valuable x-ray study may lie in a comparison of the recent with older films if available. Evidence of growth of the lesion is an indication for its prompt removal. Recommending another film in three to six months could seal the patient's doom in the presence of malignancy. From the experience gained by these studies, we have concluded that the only reliable and accurate diagnostic procedure is exploratory thoracotomy with excision and prompt pathological examination of the mass.

From the 96 nodules studied, 55 have been definitely proven by surgical operation (49) or by medical means (six). The positive bronchoscopic biopsy of malignancy or the progression of the lesion to fatal termination, the recovery of tubercle bacilli or the demonstration of a proven primary tumor elsewhere has been accepted as final medical proof. Fifteen (27.3 per cent) of the 55 proven nodules were malignant. Eleven were due to primary bronchiogenic carcinoma, one to a primary lymphosarcoma in the periphery of the lung and three to solitary metastatic nodules from carcinoma of the breast, colon and testicle. Eighteen (32.7 per cent) were found to be benign tumors.

The microscopic picture of most grandulomas of varying etiology is similar and the only positive proof of the tuberculosis or other etiology of such lesions is the demonstration of the specific organism. The number of proven tuberculosis granulomas (six of 22) is small for this reason. Five others are listed as suggestive of tuberculosis because of the clinical findings and microscopic picture. Perhaps the pre-operative administration of streptomycin may have been a factor in negative cultures reported in this group. To date, our attempts to isolate other organisms from a group of these nodules have been disappointing, hence, the 10 nodules of undetermined etiology. The fact that some of these nodules unquestionably represent mature and burned out lesions must also be considered. The 41 undiagnosed nodules listed represent a group of patients who either have not completed their workup or have refused exploratory thoracotomy as recommended to the physician.

With the surgically treated patients, the usual procedure has been, at open thoracotomy, to excise the local nodule by means of a wedge resection and suturing the lung behind clamps while the pathologist is making his examination of the excised nodule. The

POSTGRADUATE LECTURES FOR SOUTHEASTERN COLORADO PHYSICIANS

Third Monday of each month—Mennonite Hospital and Sanitarium La Junta, Colorado

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PROGRAM

October 15, 1951

10:30—Cesarean Section, Indication, Contraindication, Specific Type of Surgical Technic
Eugene S. Auer, M.D.

Toxemias of Pregnancy
Thomas H. Foley, M.D.

November 19, 1951

10:30—Diverticulitis and Diverticulosis
James C. Owens, M.D.

Carcinoma of the Pancreas
Mordant E. Peck, M.D.

procedure has been extended to segmental resection, to lobectomy or even to pneumonectomy as conditions and the pathologist's findings warrant.

This experience and the reports of others have convinced us that an accurate pre-operative diagnosis of the nature of an isolated pulmonary nodule is impossible in the vast majority of instances. Exploratory thoracotomy and immediate pathological examination provide the only accurate means of determining the exact nature of the lesion. The low calculated risk of such a procedure and the relatively high incidence of malignancy (27.3 per cent) make it the only safe and logical method of treating the isolated pulmonary nodule.

SINGLE, CIRCUMSCRIBED, INTRATHORACIC DENSITIES

Hans Abeles, M.D., and David Ehrlich, M.D., New England J. Med., Jan. 18, 1951.

In the course of mass chest x-ray surveys for the discovery of pulmonary tuberculosis, 44 patients with single, circumscribed intrathoracic densities were seen. In 31 patients, a malignant lesion could not be ruled out after a complete examination, and early exploratory thoracotomy was advised. Twenty-one patients underwent exploratory thoracotomy. Seven primary malignant lesions and one metastatic lesion were removed. Ten patients refused the exploratory operation, six of them on the advice of family physicians. Five of the 10 patients were subsequently shown to have a definitely malignant lesion. Thirteen patients observed by periodic examinations since the initial workup, suggested a benign lesion. None of the 13 patients gave evidence of a malignant lesion during a follow-up period of at least two years.

The early exploration of every single intrathoracic mass is recommended whenever a malignant lesion cannot be reliably ruled out.

NEW MOTION PICTURE

A revised catalog of motion pictures available through the Committee on Medical Motion Pictures is now available. Copies will be sent to the Secretary of each County and State Medical Society. This catalog lists sixty-two 16-mm. films, most of which are at the professional level. Fourteen of these films are suitable for showing to lay groups. Eight new films have been added. Copies are available upon request from: Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

The Book Corner

New Books Received

The Changing Years: What to Do About the Menopause: By Madeline Gray. Doubleday & Company, Inc., Garden City, New York, 1951.

A Doctor's Pilgrimage: By Edmund A. Brasset, M.D. J. B. Lippincott Company, Philadelphia and New York.

Diabetes Control: By Edward L. Bortz, M.D., Chief of Medical Service B, The Lankenau Hospital; Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia; former President of the American Medical Association. Illustrated. Lea & Febiger, Philadelphia, 1951.

Physical Biochemistry: By Henry B. Bull, Ph.D., Professor of Chemistry, School of Medicine, Northwestern University. Second Edition, New York: John Wiley & Sons, Inc. London: Chapman & Hall, Limited.

Let's Cook It Right: By Adelle Davis, B.A., M.S. (Good Health Comes From Good Cooking). Harcourt, Brace and Company, New York. Copyright, 1947.

Let's Have Healthy Children: By Adelle Davis, A.B., M.S., Consulting Nutritionist. Harcourt, Brace and Company, New York. Copyright, 1951.

Inhalation Anesthesia: A Fundamental Guide: By Arthur E. Guedel, M.D., Associate Professor of Surgery (Emeritus) University of Southern California School of Medicine. Second Edition. The Macmillan Company, New York, 1951.

Community Health Education in Action: By Raymond S. Patterson, Ph.D., Director of Health Education, John Hancock Mutual Life Insurance Company; and Beryl J. Roberts, Ed.M., M.P.H., Associate in Health Education, Harvard School of Public Health; Director of Health Education, Mas-

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sachusetts Division American Cancer Society. Illustrated. St. Louis: The C. V. Mosby Company, 1951.

Surgery of the Stomach and Duodenum: By Claude E. Welch, M.D., Associate Visiting Surgeon, Massachusetts General Hospital; Clinical Associate in Surgery, Harvard Medical School. Illustrated by Muriel McLatchie Miller. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago.

Technical Methods for the Technician: By Anson Lee Brown, B.A., M.D., President of Anson L. Brown, Incorporated, Successor to Dr. Brown's Clincial Laboratory and Dr. Brown's School for Technicians, Columbus, Ohio. Published by the author, printed by Anson L. Brown, Inc., 41 S. Grant Avenue, Columbus, Ohio, 1950-1951.

Allergy in Relation to Pediatrics: By Bret Ratner, M.D., Professor of Clinical Pediatrics (Allergy) and Associate Professor of Immunology, New York Medical College; Attending Pediatrician, Flower and Fifth Avenue Hospitals; Director of Pediatrics, Sea View Hospital. Panel Discussion: T. N. Harris, M.D.; Ben F. Feingold, M.D.; M. Murray Peshkin, M.D.; Lewis Webb Hill, M.D.; Wm. P. Buffman, M.D.; Edward Scott O'Keefe, M.D.; W. Ambrose McGee, M.D.; Susan C. Dees, M.D.; A. J. Horesh, M.D.; Dorothy W. Baruch, Ph.D.; Hyman Miller, M.D.; Richard H. Todd, M.D.; Wm. C. Deamer, M.D.; James C. Overall, M.D.; Albert V. Stoesser, M.D., Ph.D.; Jerome Glaser, M.D. An official publication of the American College of Allergists. Bruce Publishing Company, Saint Paul and Minneapolis, 1951.

Book Reviews

When Minds Go Wrong, A Simple Story of the Mentally Ill—Past, Present and Future: By John Maurice Grimes, M.D., twenty years a psychiatrist, four years a staff-member of the Council on Medical Education and Hospitals of the American Medical Association; author of "Institutional Care of Mental Patients in the United States." First Edition. Illustrations by K. Alexandra White; published and distributed by the author, 5209 S. Harper Avenue, Chicago 15, Illinois.

The subtitle of the book: "A Simple Story of the Mentally Ill—Past, Present and Future," is significant as it describes the content and intimates the purpose for which the book was written, namely, to report conditions as they were, are and should be. To the lay or semi-lay reader this is a moving and well-written story which conveys a feeling of authenticity.

There are a few mechanical and technical faults such as over-use of italics and repetition which detract slightly from the author's force and effectiveness. But the note of possible solution to the problem he poses overrides these and leaves the reader with a feeling of optimism and willingness to assist Dr. Grimes in his self-assumed crusade for bettering the care and improving the institutions for mental patients.

MINDELL W. STEIN.

Essentials of Ophthalmology: Roland I. Pitkin, M.D., F.A.C.S., F.I.C.S., Eye Surgeon, Rockford Memorial, Winnebago County and Swedish-American Hospitals; Consulting Ophthalmologist, St. Anthony Hospital, Rockford, Ill.; 215 illustrations, including 18 subjects in color. Philadelphia-London-Montreal, J. B. Lippincott Company. Price, $7.50.

The author has written a handbook covering the broad field of ophthalmology, obviously intended more for a reference for the general practitioner rather than the specialist. One wonders if the book is not intended more to fill out an "Essentials" series by the publishers, rather than to supply any great need to the profession, since the subject matter has been well covered by several previous similar volumes. However, the book is concisely written, well illustrated, and fairly well indexed, and would be of ready reference value to the medical student or general practitioner.

GEORGE A. FILMER, M.D.

Research in Medical Science: Edited by David E. Green, Ph.D., and W. Eugene Knox, M.D. The MacMillan Company, New York, 1950. Price, $6.50.

This book is at once a broad outlook and an intimate perusal of the foundations of modern medicine. In simple and engaging style, some

twenty-nine essays are presented giving the historical background and current trends of investigation for most of the great problems confronting medical practice today.

"Rheumatic Fever—A Disease for Adventure" by Coburn and "The Direction of Surgical Effort" by Ravdin are two of the discussions whose titles suggest the detailed examination and broad scope of the essays. Viruses, cancer, psychiatry, isotopes, and other timely subjects are discussed by prominent authorities with thoroughness yet with consideration for the reader who is engaged in some other field of medicine.

The necessity for understanding and collaboration between all the sciences participating in medical progress becomes strongly evident in the description of the research problems. The book is strongly recommended to all who have more than a passing interest in medicine and who desire to gain a deeper insight into its background and its future.

E. B. PRATT, M.D.

Cornell Conferences on Therapy, Volume Four: Edited by Harry Gold, M.D., Managing Editor; David P. Barr, M.D.; Frank Glenn, M.D.; McKeen Cattell, M.D.; Walter Modell, M.D.; George Reader, M.D. New York: The Macmillan Company, 1951. Price, $3.50.

The fourth volume of the Cornell Conferences on Therapy follows the same high type of writing as previous volumes. As usual, the scope covers the whole range of Therapeutics with each selected subject a problem in therapy. The editors have maintained the purpose "to stimulate interest in national therapy, and the method, spontaneous, informal, and free discussion."

The fifteen chapters include topics ranging as widely as the handling of household poisonings, the management of myxedema and the treatment of morphine addiction. In the chapter on the management of disorders of cardiac rhythm, the volume reaches its highest point of interest. To follow the arguments of such eminent cardiologists as Harold Stewart, Cary Eggleston and Harold Pardee as they seek to break down the reasoning of Harry Gold is worth the price of the entire volume.

While the book was intended for anyone interested in the "art of treatment," members of the profession practicing different specialties will find their own high point of interest. The purchase of Vol. 4 is recommended unreservedly either alone or as a companion piece to the previous volumes.

ALLAN HURST, M.D.

Pioneer Doctor: By Lewis J. Moorman, M.D., University of Oklahoma Press, Norman. Price, $3.75.

Dr. Moorman must have led an interesting and eventful life because he conveys his enthusiasm and zest for living to the reader of his book, "Pioneer Doctor." The parts of the book which deal with his early practice of medicine in Tennessee and Oklahoma are delightfully fresh and tantalizing. Many times, one wishes he had not stopped the anecdote so shortly or had given a sequel. However, in the latter part of the book, there are times when the reader feels that the author has merely gone through and edited some of his earlier articles and then included them in the book. Sometimes the integration is not smooth. On the whole, the book would do much good if it could reach an intelligent lay audience as it explains well the position of medical schools about medical education today and the attitude of doctors about compulsory health insurance. It is good relaxing reading.

MINDELL W. STEIN.

The Cytologic Diagnosis of Cancer: By the Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital, a Gynecologic service affiliated with the Massachusetts General Hospital, Boston, Massachusetts; The Department of Gynecology, Harvard Medical School; Published under the sponsorship of The American Cancer Society. W. B. Saunders Company, Philadelphia, London, 1950.

"The Cytological Diagnosis of Cancer" is primarily a book for technicians and pathologists who are actually reading smears.

It would also be an excellent primer for the embryo cytologist. It embodies the rich amount of clinical material and wide experience of the Vincent Memorial Laboratory; ably collected under the guidance of Ruth Graham.

The method of presentation consists of low power and high power photo micrographs together with colored drawings and diagrammatic keys which make a complex picture easy to understand. This is followed by clear-cut discussions of the cells and their significance.

The normal cells and their usual variations are carefully depicted first, thus providing an excellent background for the study of malignant cells. Approximately half the book is devoted to malignancies of the female genital tract. The remainder covers malignances of the lung, stomach, urinary tract and cells found in the pleural and ascitic fluids. The section covering the cells found in sputum is unusually complete.

Throughout the book an evident attempt is made to keep it practical and avoid digressions into the realm of theory. This is especially so in the sections on technique which are simple and to the point. No time is wasted on the multitude of variations in cytological technique that have flooded the literature.

An extensive and well arranged bibliography completes this excellent book.

N. PAUL ISBELL, M.D.

Southwest Surgical Congress Meets in St. Louis

The Third Annual Meeting of The Southwestern Surgical Congress will be held at the Hotel Jefferson, St. Louis, Missouri, September 24 through 26, 1951. Reservations may be secured by writing direct to the hotel. Registration will begin at 12:00 noon on Sunday, September 23, and at 8:00 a.m. on each succeeding day. There will be a $10.00 registration fee for non-members of the Southwestern Surgical Congress, only.

Index to Advertisers

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*Baumgartner, L.: Wider Horizons for Children; The Mid-century White House Conference and Children's Nutrition, J. Am. Dietet, A. 27:281 (Apr.) 1951.

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